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INFANTRY JOURNAL

Messes and Mess Management:
The Sanitation of Kitchens and Messes
Mess Management in the 29th Infantry
Mess Management in Special Units, 29th Infantry

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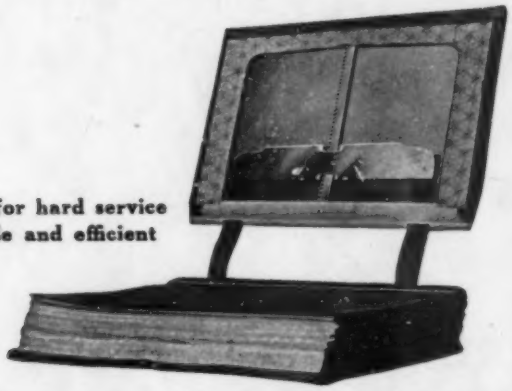

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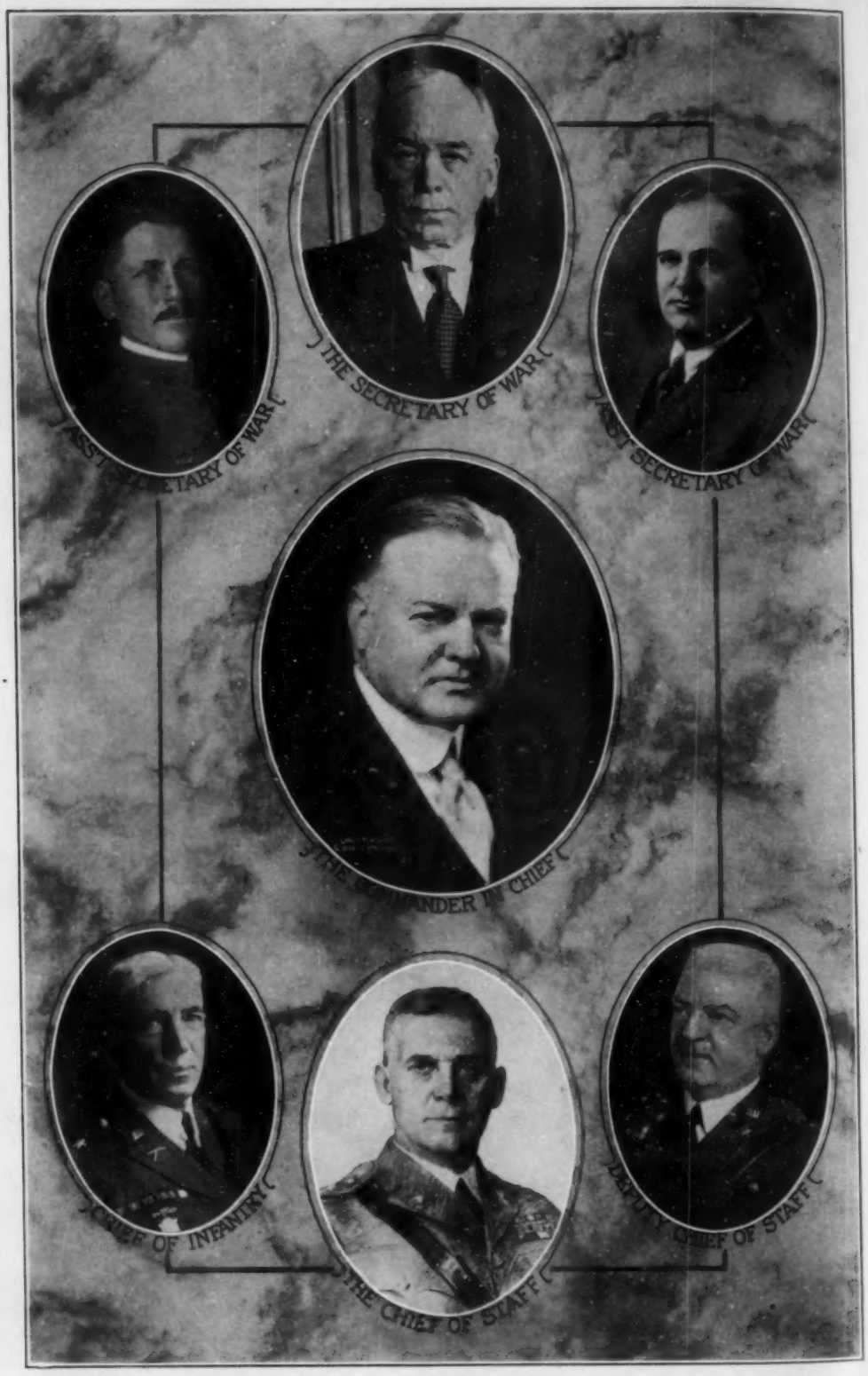
THE SECRETARY OF WAR
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INFANTRY JOURNAL

Vol. XXXIV APRIL, 1929 No. 4

Messes and Mess Management

The plan of mess management in the 29th Infantry, described by the medical inspector of the post, the regimental mess agent, and the battalion mess agent, has proved highly satisfactory. It is believed that the standard of messes has thus been raised in keeping with the desires of the War Department. The details of the system set forth in the following three articles should be of interest to the service.

HARRIS PENDLETON, JR., *Colonel 29th Infantry.*

The Sanitation of Kitchens and Messes

MAJOR EDGAR ERSKINE HUME, Medical Corps[1]

IT IS the desire and duty of the Medical Department of the Army to assist regimental and other commanders to establish and maintain facilities for the serving of well-cooked, appetizing, nourishing, and safe food to the men. In this we have one of the most important factors in the preservation of the morale and health of the Army. The medical inspector is charged with supervising the sanitation of the station, and thus is deeply interested in helping to keep the kitchens and mess halls at a high standard of excellence. He is able to contribute to the supplying of good food to the soldier in two ways: first, by advice to mess officers; and, secondly, by periodic inspections of kitchens and mess halls with a view to making constructive criticism.

At Fort Benning a very satisfactory system of mess inspection has been in operation for several years. The medical inspector inspects each of the thirty-three organization messes at least once a month. Though an effort is made to have the mess officer and the company (or other) commander accompany the inspector, this is not always possible, for the inspection is unannounced and, as far as practicable, at different times in the month so that the kitchen and mess hall personnel may not know when to expect it. Often the regimental or battalion commander accompanies the medical inspector, and in the 29th Infantry the regimental mess agent and the battalion mess agent are also present. In the 24th Infantry the officer of the day accompanies the inspector. In every instance a representative of the organization is asked to be present; if no officer is available, a noncommissioned officer is taken.

The defects found at the inspection are noted on a rating card and the at-

[1] Medical Inspector, The Infantry School, Fort Benning, Georgia.

tention of the representative of the organization is called to them at the time. Taking the errors into consideration, the mess is scored. At the end of each month the mess ratings are shown on a table of standing published in the Daily Bulletin.

The value of the competitive mess scoring at Fort Benning has been shown in many ways. Before 1918 there was one mess which, for certain reasons, was not rated. It was duly inspected, however, and always found to be unsatisfactory. The attention of the officer in charge was repeatedly drawn to the numerous defects, but his efforts to correct them did not result in a satisfactory mess. Finally with his approval, the authority of the Commandant was obtained to add this mess to those regularly rated. The result was interesting. Of course, this mess received the lowest rating of any at the station. After a few months of this, the pride of the men began to be aroused and more serious efforts were made to improve the mess.

The rating card provides for scores under twenty headings. But it is obvious that some messes are at a disadvantage. A mess in a dilapidated temporary building finds it hard to compete with one in modern permanent quarters such as the 29th Infantry Cuartel. But even so, it is most encouraging to note what many of the former class have accomplished. The inspector of course takes into consideration the kind of building and equipment of each mess.

The following list gives some idea of the points to be judged at the inspection and the defects to be looked for:

The grounds should be kept clean and free from refuse material that could serve as a breeding place for flies. There should be no bits of food (such as that fed to dogs or cats) lying about. Dish water should not be thrown on the ground. In old temporary buildings where there are holes in the floor, the ground under the kitchen and the mess hall should be clean, and free from sweepings, bits of refuse, wash water, or drippings from ice boxes. Where practicable, excessive dust about buildings should be laid by sprinkling.

The most satisfactory table is one

INSPECTION OF MESS

ORGANIZATION..... DATE.....HOUR.....M

ACCOMPANIED BY.....

1. SURROUNDING GROUNDS (5).....
2. GENERAL APPEARANCE AND ORDER (5).....
3. TABLES (5).....
4. DISHES, CLEANLINESS (10).....
5. BREAD, CARE OF (10).....
6. STOVE (5).....
7. KITCHEN UTENSILS (10).....
8. SINKS (5).....
9. STORE ROOM (5).....
10. FOOD, CARE OF (10).....
11. ICE BOX (10).....
12. DISH TOWELS (5).....
13. MOPS AND BROOMS (5).....
14. GARBAGE SEPARATION AND CONDITION OF CANS (5).....
15. FOOD HANDLERS CERTIFIED (10).....
16. WINDOWS AND FLOORS (5).....
17. FLIES AND FLY TRAPS (10).....
18. APPEARANCE OF MESS ATTENDANTS (10).....
19. CHARACTER OF MEALS (10).....
20. MISCELLANEOUS, ROACHES, ETC. (10).....

TOTAL.....

THE MAXIMUM SCORE ON EACH ITEM IS INDICATED IN THE PARENTHESES. EACH ITEM WILL BE GRADED FROM 0 TO THE MAXIMUM, THE LATTER MARK SIGNIFYING PERFECTION. 150 IS THE HIGHEST POSSIBLE SCORE.

.....

MAJOR, MEDICAL CORPS, U. S. A.

MEDICAL INSPECTOR.

THE MESS RATING CARD

with a steel top or one of unvarnished boards so constructed that each board may be removed for washing. Varnished tables are satisfactory if kept really clean, but there is always the temptation merely to wipe the surface with a cloth, thus leaving a film of grease. Tables with cracks between the boards are apt to have them filled with particles of spoiled food. A few messes at Fort Benning use table cloths (changed daily). At inspection it is important to look under the cloths.

Bread should be kept in ventilated shelves protected from dust and flies. It should not be ordered in such quantity that it is necessary to serve stale bread, nor cut up in too large amounts with resulting loss. Garbage cans should be examined for the presence of discarded bread or other foods. In this way they offer an index of the character of the meals. Bread baskets must be washed frequently, kept covered and not used as containers for other articles. The quality of the issue bread should be examined.

If dishes are washed and then rinsed in hot water and allowed to drain rapidly, they are clean when needed. Those not in regular use should be kept in closed cabinets as far as practicable, to avoid collection of dust. Syrup jugs, sugar bowls, and salt cellars must be washed frequently. Milk bottles must be washed before collection by the dairy. Common drinking cups are not permitted, nor water containers into which drinking cups are dipped.

While a dirty stove may not directly contribute to sickness, it is a good index of efficiency in mess management. The interior of the oven as well as the top of the stove is to be examined. There may be bits of food not removed, soot, and dust or rust. A defective stove may result in a smoky kitchen and mess hall. Proper consideration must be given to the stove's being in use, if the inspection is made near meal time.

Sinks should be set out from the walls if possible, thus affording less space for water-bugs (small roaches). Sinks should be cleaned after use, bits of food removed, and never used as storage place for soiled dishes or other articles.

Utensils should be cleaned frequently and kept free from rust, grease, and dust. They should not be used as receptacles for food that should have been thrown away or placed in the ice box. Pans and pots may be burned out occasionally. Knives and meat saws must be kept clean and free from grease. Frequently a mass of decaying meat pulp will be found in the handle of the saw, even though the blade may be clean. If knives or other utensils are cleaned by rubbing with sand or earth, it is imperative, in the south at least, that they be baked afterwards in the oven for ten minutes in order to kill hookworms which live in the upper layers of the soil.

Store rooms should be kept free from exposed foods which might attract flies, roaches, mice, or rats. Decaying vegetables must not be allowed to accumulate. Vegetables such as potatoes and onions should be kept in aerated bins. A place for the clothing of kitchen personnel should be provided so that it need not be kept in the food store rooms.

Meats and other perishable foods must not be allowed to stand at room temperature; they must be placed in the ice box at once. Cooked food suitable for later use, but that need not be stored on ice, should be kept protected from dust, flies and the like. Meat

STAND FOR GARBAGE CANS (TEMPORARY)
Showing compartments for cans for the several kinds of refuse

sacks should be washed after each use. Meat blocks should be scrubbed clean and may be covered with salt when not in use. Food should not be kept in damp places. Canned foods should be examined for signs of deterioration. This may be indicated by pin holes in the cans, bulging ("blown") cans, or leaky cans.

Ice boxes must be in sufficient repair to afford the necessary protection and refrigeration for foods. They should not be used as a storage place for articles that do not need cold for preservation. They must be cleaned daily and be kept free from spoiled food. There should be no unpleasant odor about the refrigerator. Meats must be so kept as to be in contact with the air but not directly against the ice. Ice must be stored in the ice compartment only. The drainage from the ice box must be in good repair; drippings must not stand on the floor or the ground nor come into contact with the food. If ice boxes are connected directly with a sewer, an air break and water trap must intervene.

Cloths used in the kitchen must be clean. The drying of dishes and utensils by dish towels is not authorized.

Mops and brooms must be serviceable. They must be kept in such a way as to insure prompt drying. The counterpicture of this is the "inspection stand" of mops and brooms which are for appearance only and never used. Mops must be washed after use and not be stored in contact with food.

Without proper facilities for the disposal of garbage no mess can be satisfactory. Garbage should be separated as outlined below; the cans must be washed and scalded daily, tightly covered, and kept in a screened stand or indoors. It is thought that the garbage can may properly be kept in the kitchen. Here it is more available, less accessible to flies, and more apt to be kept clean. The ground about a garbage stand must be kept clean, and care is to be exercised to prevent the spilling of garbage on the way from the kitchen to the stand.

Certificates are required of all permanent kitchen and mess hall per-

sonnel and of all those engaged, even temporarily, in the preparation of food. Certificates must be renewed every six months. They are issued by the medical inspector after a physical examination by the out-patient department, and are intended as a safeguard against the possibility of an individual with a communicable disease contaminating the food. At Fort Benning the certificate is in the form of a small card which may be carried in the pocket if desired.

Windows must be screened and must keep out dust. Floors must be clean and without bits of refuse, dirt, or water standing thereon. Screen doors must be in good repair, flyproof, and provided with springs that will keep them closed when not in use.

The presence of flies in a kitchen or mess hall is a serious defect. Fly swatters should be used to destroy flies that have gained admittance. At Fort Benning "Swat the Fly" signs have been distributed by the medical inspector. Fly-traps should be placed outside the doors of kitchens and kept properly baited.[2] The use of anti-fly sprays which do not impart a taste to foods is permissible.

The appearance of mess attendants is of importance. Slovenly men in the kitchen means that a slovenly meal will be served. Clean white clothing should be worn. In hot weather men may work without shirts, but clean white undershirts are required. The hands must be kept clean and the nails cut short. Men on sick report are not permitted to work in a kitchen or mess.

The quality of the meals is of the utmost importance. The menus must be examined at each inspection and suggestions made to the mess officer. At least one uncooked green vegetable should be served each day. The use of fresh milk or buttermilk is advised. The meat component of the ration should be varied (not too much beef), and too many left-overs avoided. Fresh vegetables are to be preferred to those in cans (though the reverse is sometimes found in messes, even when there is no difference in cost). Messes that can draw from gardens are in a better position in this respect than others. In general, perishable foods are to be used before those that will keep. At certain times, as during an epidemic of influenza, special advice in the selection of menus should be sought of the medical inspector or other medical officer. Meals must be palatable and served hot. The quality of the drinking water and ice must be taken into consideration.

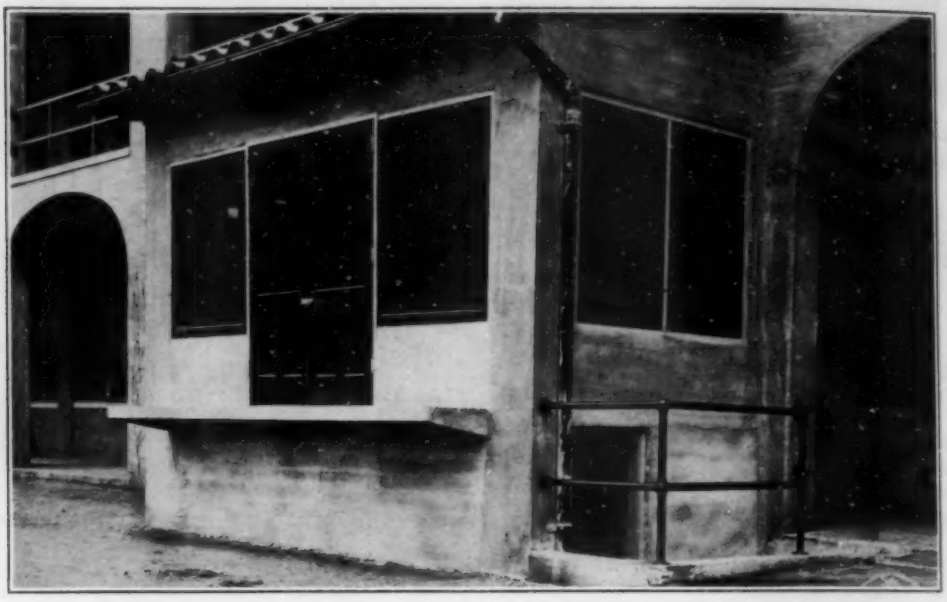
The mess should be kept free from roaches, ants, and other insects, and mice and rats. Pets, such as dogs and cats, must not be allowed in kitchens and mess halls. Proper toilets must be available to the personnel of the mess; and facilities for washing the hands are of course essential.

A system of inspection, like any other system, is to be judged by the results produced. At Fort Benning all

[2] The following formula for bait has been found satisfactory:

Corn meal (or bran) Molasses Water	Equal parts.
Yeast—sufficient to cause fermentation.	

The mixture should be stirred occasionally. The use of bits of meat, decaying vegetables, or other foods is unsatisfactory, as they do not attract flies well, but do cause dogs and cats to overturn the traps in their effort to reach the bait. Such foods also attract mice and rats. The base of the trap should be not more than 2 inches from the ground or floor.



COMPANY VEGETABLE CELLAR, 29TH INFANTRY CUARTEL
The upper part is screened and serves as a stand for garbage cans

messes are unquestionably of a high quality. The competition for standing is keen, and mess officers agree that the publication of the medical inspector's ratings is a most important factor in maintaining the high standard set. In the 24th Infantry a pennant bearing the words, BEST MESS, is awarded each month and is placed in the winning mess during the succeeding month, and is also carried in formations. The 29th Infantry takes the mess rating into consideration in the monthly award of the "Regimental Blue Pennant" to the best company, and the regimental commander writes a letter of commendation to the mess that receives the highest rating. Other organizations also recognize the efforts of the kitchen and mess hall personnel in obtaining good ratings. The 29th Infantry has a regimental mess agent, and each battalion has a battalion mess agent, whose duties are to supervise messes. The work of these officers is described in the articles by Captain Ulsaker and Lieutenant Skelton in this number of the INFANTRY JOURNAL.

The obvious objection to the system is that a mess that is inspected but once a month may have the misfortune to be seen when unprepared for inspection or when in temporary disorder. However, the law of chance protects a mess against the too frequent repetition of such an experience, and it is believed that in the long run the ratings reflect the true nature of the mess. The time required for the inspection of all messes on the post is great, and it is impracticable to make more than one inspection of every mess in a month. However, certain messes, selected at random but varying from month to month, are inspected a second or a third time. Thus the personnel of the mess can never know when a second inspection will follow the first,

so that there is no tendency, after the inspection, to let the mess run down for the remainder of the month.

Another difficulty is the fair comparison of a mess (such as that of the Infantry School Detachment, which serves more than 900 meals per day, at three sittings) with a mess of a small organization. Objection may also be made that the defects to be looked for are not such as would require a medical officer as inspector. While this is obviously true, the moral effect of the medical inspection in addition to those made by the organization commanders, mess officers, and others, is such as to justify the practice. As said before, the answer to such objections would be that satisfactory results have been obtained and Fort Benning has excellent messes.

The officers' messes of Fort Benning are inspected, but not rated. These messes are operated as a rule by civilian employees, and comparison would be unfair. Officers' messes are, as a rule, inferior in appearance and police to those of the enlisted men, and this is no peculiarity of Fort Benning.

The separation and disposal of garbage was mentioned above as important. The amount of refuse from about messes is enormous, and of course the arrangements for disposal must also consider the garbage from the quarters of the families on the post.

The following system is used at Fort Benning. In each mess refuse is separated into three classes, at least three galvanized iron cans being used. The first can contains garbage fit for pig food. The second contains garbage unfit for pig food, including coffee grounds, bones, tin cans, broken glass, and the like. The third is for clean ashes to be used for filling holes, repairing roads, and so on. A placard describing the proper separation of garbage is distributed by the medical inspector and posted in all messes. The pig food is sold by the quartermaster (no pigs are kept on the post) and the refuse is burned at the incinerator. Some messes have screened garbage stands. In the new 29th Infantry Cuartel a concrete cellar has been constructed for each mess in which potatoes and similar vegetables can be kept, and the roof of which (screened) serves as a stand for garbage cans.

The post incinerator at Fort Benning is a most efficient utility. It was built entirely of salvaged materials and without expense to the government. It is of the multiple-shelf type, with two separate furnace cells. It burns more than 15 tons of refuse daily. Since it is impracticable to separate the garbage from private quarters, all such refuse is burned. Old boxes and crates furnish most of the fuel for operation of the incinerator, and the appliance heats the water used for washing the garbage cans. Under his contract, the purchaser of the pig food is required to wash the cans at the incinerator and to deliver them clean and ready for use.

And so, though proper sanitation of kitchens and messes calls for meticulous care and attention to detail, reinforced by inspections, it is worth all the time and effort that we can put on it—for it protects the health of the command.

II

Mess Management in the 29th Infantry

Captain Carl M. Ulsaker[3]

A CENTURY ago Napoleon said that an army fights upon its stomach. Time was when the soldier expected only such coarse food as could be foraged from the plundered countryside, with frequent long delays between meals. In other words, the soldier's ration consisted of whatever was available. In the days of bully beef, salt pork, beans, hardtack, and coffee in our Army the Napoleonic theory was of importance to our officers; lack of transportation facilities and the public idea of an active man's diet made the above-named articles of the ration predominant in the soldier's diet for many years.

Today dietitians, food experts, and chemists tell us that food should be taken into the stomach in certain proportions of proteins, carbohydrates, fats, mineral matter, and those recently recognized items called vitamins. Just as our Army has always been foremost in stamping out disease, so it now comes to the front in the preservation of health by supplying proper food.

Time after time there have been improvements in the ration. In 1924 it was decided that the thirty-cent ration did not supply the necessary fresh vegetables, beverages, fresh milk, and butter. This led to the authorization of the thirty-five cent ration. After a fair trial, it was found that the thirty-five cent ration did not produce the desired variety, as the increase of five cents was not in proportion to the increased cost of food. Various means of raising additional funds for messes were resorted to, such as establishing gardens, raising hogs, and keeping cows. A thorough research resulted in the authorization by Congress, effective on July 1, 1927, of the new fifty-cent ration.

Section II, Circular No. 46, War Department, 1927, authorized an increase in the number of articles authorized for the quartermaster to carry for sale to messes. The War Department then announced that any articles of food desired by organization messes and not included in the authorized sales list, could be purchased by organizations, through the quartermaster, from the ration savings of such organizations. The purchases were to be made by the quartermaster in the open market, without advertising and without contract, the cost to be charged to and settlement made from the ration credit of the organization. Further, it was directed that commanding officers positively prevent intentional evasion by organizations of the provisions of paragraph 15, Army Regulations 30-2210, which requires the purchase, from the quartermaster of all component articles of the ration and sales articles on the authorized list required for the supply of troops, when such articles are available.

The advantages and disadvantages of this plan of purchasing through the quartermaster are:

[3] Mess agent, 29th Infantry.

(*a*) *Advantages:* (1) Quantity purchase, resulting in better prices;

(2) Better quality, through closer inspection and more rigid specification requirements;

(3) Elimination of petty graft, such as might exist through loose purchase methods by organizations;

(4) Confining the large expenditure of government funds involved to a governmental agency duly set up for the purpose;

(5) Purchasing under competitive bidding, with resultant better prices.

(*b*) *Disadvantages:* (1) Elimination of the possible benefit of daily market fluctuation in fruits, vegetables, and fish;

(2) Lack of storage facilities in Army posts for keeping perishable stores, which must be ordered from day to day as needed by the consuming organizations;

(3) Limited facilities of local markets, in many instances making it difficult to obtain from any one dealer the quantities desired;

(4) Restriction in "shopping" sometimes requiring organizations to place their orders in advance of actual requirements.

The War Department then directed that measures be taken to make effective these purchase requirements, with a view to securing a general trial of that line of action which has proved most successful during the period ending December 31, 1928.

After the new ration had been effective for a year, a War-Department letter of instruction stated:

(*a*) The intent of Congress in providing the new ration for the Army was to raise the standard of living of the soldier to make it commensurate with his status. The ration allowance is sufficient to procure fresh fruit, vegetables, milk, eggs, real butter, and a daily variety of fresh meats, breadstuffs, rich and palatable desserts.

(*b*) Frequent inspections have shown:

1. Instead of procuring the above, messes are generally little better than they were under the old ration;

2. Prevailing menus contain too much beef, with the corresponding wastage that forces the use of the balance of quarters in hash, meat balls, stews, and similar unpalatable and innutritious dishes;

3. Imitation butter served at one meal per day, instead of real butter at every meal;

4. Menus show the old routine of potatoes, bread and coffee, with few rich and palatable desserts;

5. Infrequent serving of fresh fruits and fresh vegetables other than potatoes;

6. Little variety of breadstuffs;

7. Bologna and other forms of inferior sausage in common use;

8. Milk sold to men in messes instead of being served on the allowance;

9. Great wastage due to procurement of large quantities of inferior food;

10. Excessive patronage by soldiers of post-exchange restaurants because of lack of variety of food served by organization messes;

11. Messes generally controlled by noncommissioned officers, owing to lack of knowledge of mess management on the part of company officers.

The mission of all 29th Infantry messes has therefore become to provide sufficient fresh fruits, vegetables, milk, eggs, meats, and real butter, together with a suitable variety of breadstuffs, rich and palatable desserts within the ration allowance.

As a result of instructions issued at this station, a system of purchasing through the quartermaster has been in effect since October, 1927, and has proven satisfactory, with minor exceptions. Under the system of competition, inspection, and supervision, and the facilities for purchase available, troop messes have attained a high standard of excellence. There has been a marked improvement under the new

ration allowance. Notwithstanding the generally excellent results now obtaining, the regimental commander believed that the minor exceptions could be remedied to the end that the standards outlined by the War Department might be fully realized.

BREAD BOX DESIGNED BY
LIEUT. J. B. COLSON, 29TH INFANTRY

To that end a regimental general order prescribed the following:

1. The messes in the regiment were grouped by battalions, with the object of improving meals, coordinating bills of fare, and combining purchases in order to secure the advantage of the greater purchasing power.

2. An officer was designated as the regimental mess agent[4] and, in addition, an officer was designated in each battalion as the battalion mess agent.

3. The regimental mess agent, under the regimental supply officer, represents the regimental commander. He considers the purchase requirements of each mess group, combines purchases as far as possible, coordinates deliveries from the commissary and the post exchange, supervises the preparation and serving of food, inspects messes daily, checks and compares menus, and informs battalion mess agents as to the most advantageous purchases available on the market.

4. The battalion mess agents represent their battalion commanders. Within their battalions they coordinate menus in advance for each calendar week and cooperate with the regimental mess agent in formulating and executing a workable, flexible plan.

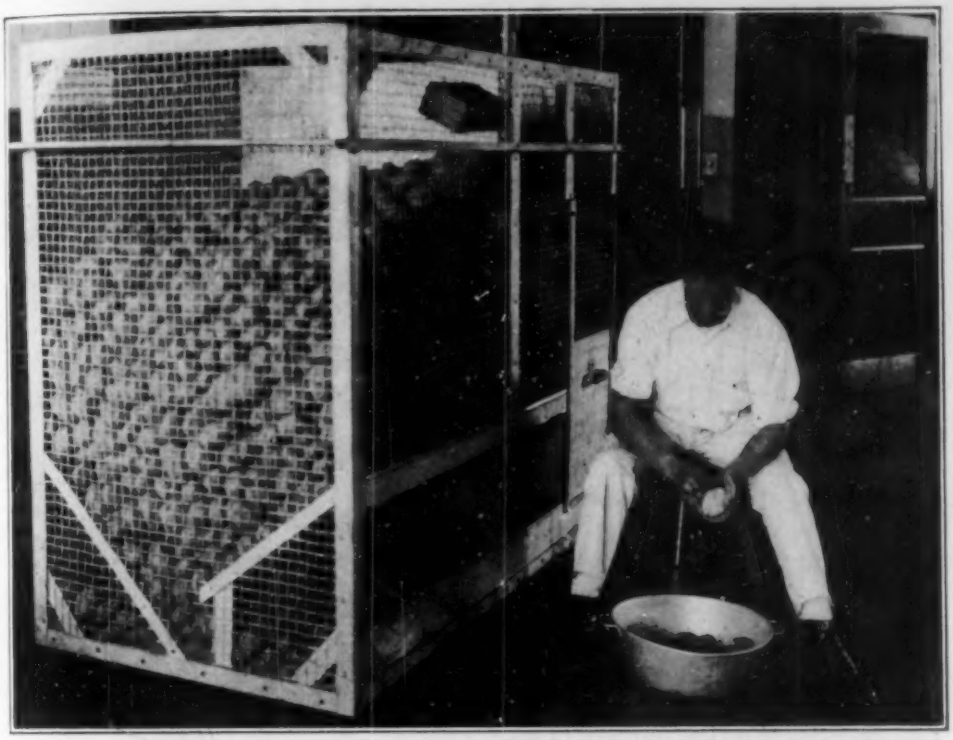
5. The purchase of mess supplies from other than post agencies or by noncommissioned officers on their own responsibility is prohibited, as is also the sale of milk or other food supplies to men in messes.

6. All company commanders were to be prepared to render a report through their battalion commanders to regimental headquarters not later than December 20, 1928, on the results of the service rendered by the Subsistence Branch, Quartermaster Corps, for the period August 1 to December 20, 1928. In such reports, company commanders were to state whether or not the results had been satisfactory and advantageous to the company messes, and were to set forth their views and offer constructive criticism. The regimental mess agent was required to compile a report as of December 31, 1928, giving in detail the measures taken to effect coordinated purchasing and the results obtained.

There followed a memorandum which provided:

General.—Coordination through mess

[4] The writer.



VEGETABLE BIN DESIGNED BY LIEUT. J. B. COLSON, 29TH INFANTRY

groups must not reduce the existing high standard of efficiency in messes or curtail the individual initiative of company commanders, mess officers, and mess sergeants.

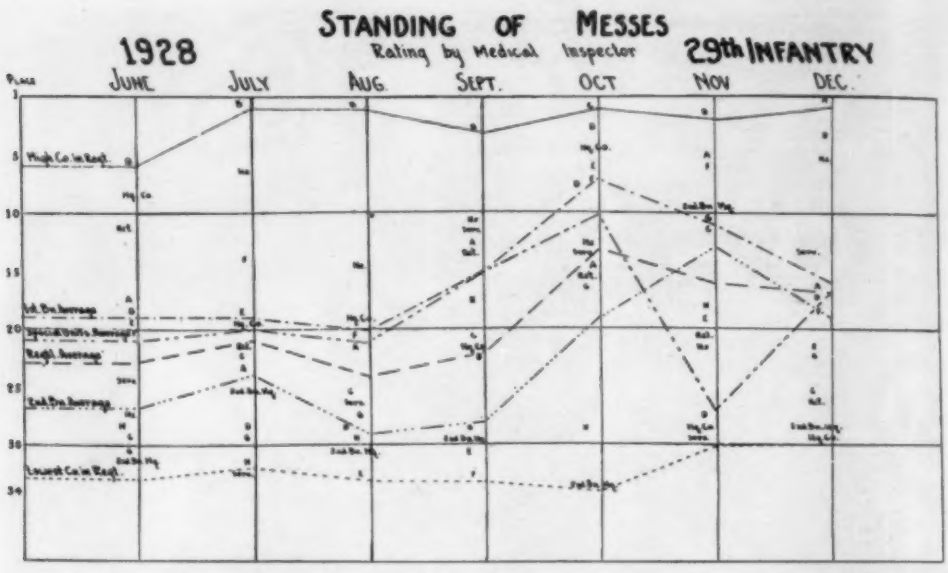
Purpose.—The purpose of coordination was to procure for messes, within the ration allowance, a maximum variety, greater quantity, and higher quality of exceptional articles of subsistence.

Details of Execution.—Since the details of execution, as they actually were worked out in messes under the battalion mess agent, are fully described in another article in this issue of the INFANTRY JOURNAL,[5] it will merely be stated here that company mess officers met with their battalion mess agents on a designated day and coordinated the menus for the following week; the battalion mess agents met with the regimental mess agent and combined the purchase requirements for the regiment from the menus in such a way as to use certain perishable articles at approximately the same time, thus making possible larger purchase orders by the commissary. From the approved menus, organizations requisitioned exceptional articles twenty-four hours in advance of the day required and regular issue articles once each week.

Balanced Rations.—Individuals who prepared menus were instructed to consider all of the components of the ration as contained in Section II, War Department Training Manual 2100-152, "The Army Cook," and in Bulletin 57, Series X, The Quartermaster Corps Subsistence School, "The Soldier's Mess," with a view to obtaining balanced rations.

Attention was especially directed to those parts of the above texts which emphasize careful control of the meat

[5] See "Mess Management in Special Units, 29th Infantry," page 350.



component in order to make the necessary savings to obtain sufficient fresh fruit, vegetables, milk, buttermilk, eggs, butter, and a variety of beverages and desserts. For the purpose of controlling this, a variety chart was recommended to be kept posted in each mess daily.

A model form was recommended as a guide for daily menus. A requirement was that all hot food be served in hot containers and hot breakfast dishes be served cafeteria style direct from stoves. The following were recommended to all messes: hot breads each day; corn-bread once each week; pastry or pudding each day; one raw vegetable or fruit each day. As a result each battalion mess agent worked out a very satisfactory solution, of which the best features of each were adopted throughout the regiment.[5]

During the development of the system, the regimental commander kept himself posted, through monthly reports from each organization, as to the effect on organization mess funds.

The monthly sanitary inspections by the post medical inspector have helped the messes in many ways. The accompanying graph indicates that mess sanitation has become more uniform since coordination was commenced in November, 1928.

In order to improve the purchasing power of the messes of the regiment, there is distributed to each mess a daily market report obtained from the Market News Service, Bureau of Agricultural Economics, U. S. Department of Agriculture, in Atlanta, Georgia. This report contains the quantity, quality, and price of fruits and vegetables available on the market each day. It is of value in selecting perishable items for menus and in comparing the prices.

The marketing facilities in the vicinity of Fort Benning are not as favorable as they are at some stations; the large marketing centers are about 100 miles away. Even so, with advance notice, it has been possible to obtain all exceptional articles that the messes have wanted.

In compliance with post orders, all

officers below field grade, including one officer per month from each company, are required to take a one-month course in the School for Bakers and Cooks. There, in addition to learning mess management, they receive practical experience in cooking and baking. Only graduates of this school are detailed as company mess officers.

The results obtained bear out the remarks of one of the post medical inspectors who has considerable knowledge of food management in the larger hotels: "I would rather eat in a 29th Infantry mess than in the best hotels in the country." He also made special mention of the uniformly excellent variety and balance in menus of the messes of the regiment after the institution of our system of coordination. His opinion is substantiated by the noticeably increased satisfaction of the enlisted men of the regiment with their messes.

The cooperation of the quartermaster with the mess agents has been commendable. With very few exceptions, he has obtained everything that the messes have wanted, of good quality and at lower prices than would have been possible through uncoordinated buying.

An analysis of the reports submitted by all organizations together with general observation discloses the following advantages and disadvantages of the system of coordination:

ADVANTAGES

1. Through combination of purchasing power, together with the coordination of menus, a substantial saving of mess funds has been effected, amounting in some organizations to as much as $75.00 per month. Messes use this saving to purchase additional fresh milk, eggs, butter, and a variety of fresh fruits, vegetables, meats, and the ingredients for breadstuffs, rich and palatable desserts.

2. It eliminates inferior foods and the resultant wastage.

3. By eliminating "shopping" the system keeps the mess sergeant at or near his mess all day—result, higher mess efficiency.

4. One ration account with the quartermaster simplifies the keeping of mess accounts.

5. Combination of purchasing power develops competitive bidding, which produces lower prices.

6. The supervision of messes by mess agents stimulates the activity and pride of mess personnel so that they maintain a high standard of quality and serving of food. This, together with the savings effected, insures to the soldier the full benefit of the ration.

DISADVANTAGES

1. Combined purchasing eliminates "shopping" and prevents personal selection of perishable food articles by the mess sergeant, and benefit from daily fluctuation in market prices.

2. Coordination of menus limits slightly the individual initiative of the mess sergeant in planning meals for his organization.

CONCLUSIONS

1. A satisfactorily balanced ration can be obtained within the fifty-cent ration allowance through combination of purchasing power and mess coordination within each command.

2. Special mess supervision within the command produces a uniform and higher standard, since it places the otherwise mediocre mess on a par with the excellent mess. This is done with-

out serious interference with the individual initiative of the organization mess personnel.

3. It is believed that, at stations garrisoned by several units, even more satisfactory results can be obtained by coordinating the menus of all of the units, thereby increasing the combined purchasing power.

4. Where stations are situated near large marketing centers, coordination of menus and resultant increase in combined purchasing power should result in even greater savings than have been made at Fort Benning. In the purchase of perishable stores, the larger the order is, the better the price and the greater the saving.

III

Mess Management in the Special Units, 29th Infantry

First Lieutenant W. G. Skelton, 29th Infantry*

THE regimental orders set as the mission of the battalion mess agent:

1. To work to improve the messes and menus;

2. To coordinate the menus so as to make combined purchases possible.

An analysis of menus of all companies in the battalion for a month showed that all were serving an excellent variety of food. It was the opinion of the battalion commander, who made frequent inspections, that the food was well prepared and well served. However, the variety could be improved so as to be more healthful. It was a difficult problem to decide how to bring this about, for the average company commander takes the attitude that if he has a good mess it should be left alone. A standard menu was considered, but the following disadvantages made it objectionable:

(*a*) The financial condition and size of the companies varied, so that some could afford more extras than others.

(*b*) The men of one company liked certain articles of food which the men of another company disliked.

(*c*) The standard menu prohibited the best use of individual cooks. All cooks are especially good at preparing some food items, and even the best cooks have indifferent success with other food items. A mess sergeant can plan his menus so as to take advantage of the best abilities of his cooks.

It was therefore decided to make a table of minimum components for each meal, which would insure a proper and healthful variety, and to require each mess to make its menus according to the table. This table is as follows:

Breakfast:

One cereal or fresh fruit (fresh fruit at least 10 times each 28-day period);
One meat or meat substitute;
One vegetable (may be omitted if fruit is served);
One hot liquid, preferably coffee;
Bread, preferably toast or hot bread;
Sugar, milk, and butter.

* Battalion mess agent.

Dinner:
Soup (at least once every two days);
One meat or meat substitute;
One leafy vegetable, One root vegetable { One must be fresh and uncooked, if no fresh fruit is served for breakfast;
One prepared dessert;
Bread, preferably baker's bread;
One liquid, other than coffee;
Butter.

Supper:
One meat or meat substitute;
One vegetable;
One hot bread;
Jam, jelly, or syrup;
One hot liquid;
Butter;
Milk and sugar (if coffee is served).

Note 1: Dinner will be the main meal of the day, and left-overs will not be utilized at this meal.

Note 2: Meat will not be served for supper except in the utilization of left-overs and waste parts. These left-overs must be prepared, and not served as warmed left-overs.

Note 3: Messes are not limited to the above table. As much as desired may be served in addition to the minimum components above required for each meal.

It will be noted that this table requires the following departures from the usual custom in messes:

(*a*) Real butter is served at each meal. Tests have shown that men will eat less butter if they have it at every meal than if they have it less often, say once daily;

(*b*) Hot breads are served at every supper with a sweet, such as jam, jelly, or syrup;

(*c*) A dessert is served at every dinner; it is a prepared pastry or pudding instead of the usual canned fruit;

(*d*) The use of fresh meat is restricted to dinner;

(*e*) One raw fruit or vegetable must be served daily;

(*f*) The use of left overs is restricted to supper.

The table provides the proper quantity and variety for one day, but does not control the variety over a period of time. A table was therefore made showing the maximum and minimum numbers of times certain items should be served during a period. In order to facilitate checking, this period consists of four weeks, each beginning on Saturday, and the calendar months are ignored. This form has seven columns: the first for the food item, the second and third for the maximum and minimum numbers of times that item may be served each period, the last four are blank and are headed 1st Week, 2d Week, 3d Week, and 4th Week. Whenever an item is served it is checked in the proper week column. This form is posted daily in each mess and is kept in a prominent place so as to be readily available for inspecting officers. A glance at the form will show how many times an item has been served each week, and whether it is being served too often or not often enough. At the end of the period the form is filed with the menus.

A SATISFACTORY TYPE OF SERVICE TRUCK

No attempt was made to list all possible food items in this table. For instance, fifteen meat items for dinner are listed, and each one is recommended to be served at least once each period. Some items, such as fish, beef-

steak, and chicken, are recommended to be served not more than once each week. Likewise, fourteen leafy vegetables are listed and each one is recommended to be served at least once each period. Items are thus shown for all three meals. It is obvious that any menu for twenty-eight days which follows the recommendations will have a proper variety.

It must be noted that the messes are not required to follow the recommendations exactly. The mess agent checks the form weekly, and, if a mess is not serving the proper variety and the menus vary greatly from the recommendations, the menus are changed accordingly. In practice, some messes fail to follow the recommendations in one or two items, but as the proper variety is served it is not required that these items be included in the menu. These items vary for the different messes. For instance, one company apparently relishes squash, while in another company squash will hardly be touched. It is doubtless the result of preparation and shows a condition that would cause trouble if a standard menu were used.

Regimental orders prohibit the sale of milk in the messes, but require that it be served. It is possible to have it with cereal two or three times each week by serving about one-half pint to each man. Buttermilk is inexpensive, and good buttermilk is very healthful. It is served several times each week as a beverage.

The problem of coordinating menus so as to combine purchases is not difficult for the battalion mess agent. The only items available for such coordination are perishable exceptional articles (perishable articles not included in the ration component), and consist almost entirely of fresh fruits and vegetables.

On Tuesdays the company mess officers report to the battalion mess agent with the prepared menus for the following week, which begins the next Saturday. The menus are compared, and if a saving can be effected by the combined purchase of an exceptional article, the menus are changed, if necessary, so that all messes can receive the required quantity of that item at the same time. When an article of food by such change is inappropriate for the balance of the meal, the entire meal will be changed. The battalion mess agent then reports to the regimental mess agent with a copy of the coordinated menu for each mess within the battalion. If further coordination is possible, the changes are made according to the system used within the battalion.

In this way company mess officers and battalion mess agents do their part toward making company messes what they should be and what everyone wants them to be.

Principles of War?

MAJOR E. S. HUGHES, Ordnance Department

TZU-LU said, "The King of Wei looks to you, sir, to govern. How shall you begin?"

"If need were," said the Master, "by putting names right."

"Indeed," said Tzu-lu, "that is far-fetched, sir. Why put them right?"

"Yu," said Confucius, "if names are not right, words are misused. If words are misused, affairs go wrong."

And that conversation, bequeathed to us from the mists of Oriental antiquity, appears to cover the case exactly. We misuse the word "principle" and "affairs go wrong."

Affairs have been going wrong for a long time; in fact, ever since the first English writer on war, when choosing from the multitude of synonyms at his disposal, selected the word "principle." And they will continue to go wrong just as long as we persist in using this word of several meanings in a sense inappropriate to our needs.

At the risk of engaging once more in a war of words, that favorite pastime called logomachy, it may be well to point out that "principle" has, among other meanings, the following: a settled law or *rule of action;* a determined *rule of* right *action;* a rule consciously and resolutely adopted as a *guide to action* when unqualified; *and* a fundamental truth on which a teaching rests; general truth or proposition.

My contention, the theme of this article, is that in our many and frequent discussions of war we have made an unfortunate selection from the meanings of the word "principle." We have forgotten our main mission and have become involved in a minor engagement the winning of which, while it may provide a certain satisfaction, will contribute little that is worth while to the success of the whole.

Our principal mission is to learn, and to teach others, how to fight. We want to be, and want others to be, successful exponents of the art of war. In order to do that we began by studying military history to see how successful wars were waged, and to provide ourselves with *guides to action.* In the beginning we were just plain soldiers anxious to know how to conduct properly the business of combat. Now, apparently, we are theorists engaged in the hopeless task of formulating a set of infallible and immutable truths of war.

I say the task is hopeless, because after many years and constant attempts we seem not to have progressed very far. We appear to have attained the same degree of success in reducing the art of war to a few sentences or paragraphs as business leaders have in telling the young men of the world how to be successful. The magazines are full of articles by persons who have attained to what the world is pleased to call success. They tell us that hard work is essential to success, and indulge in a lot of other glittering generalities that lead the reader nowhere. The golf professional says, "Timing is essential to good golf," and it is not until after years of golf that the player suddenly realizes the greatness of this fundamental and immutable truth that he once heard.

"Superiority over the enemy is essential to success" is no doubt a principle. It is too general and elementary to be anything else. But from the standpoint

of pedagogy it is of doubtful aid to the embryo commander-in-chief. It is true. In fact it is a general truth. But it is too general to be of value to any one who has not studied long and hard the art of war. If he has studied it, he has the same need of a principle as the golfer who must be reminded occasionally about his timing.

The author of the article, "What Is Wrong with Our Principles of War?"[1] quotes this statement: "All any commander ever used was his judgment and common sense, backed up by his knowledge of the situation." That is the most concise and accurate summary of the facts that I have ever seen. No statement could be better or more concise, in my opinion, unless we were to write, "All that any commander ever did was to act intelligently."

What is intelligence? What is that quality of which each of us has so much and the other fellow so little? There are as many conceptions of intelligence as there are of tact or any other human quality, but more and more there is apparent the growing conviction that intelligence is the ability to adjust oneself to a new situation. Many believe that a high-class standing is the sole indication of intelligence, and we are so accustomed to that conception that we fail to attribute real intelligence to the so-called "goat" who in after life makes a success of all he does. We see some man who graduated low in his class go up with a rush to the control of practical affairs, and we sit and wonder and discuss.

We should understand if we appreciated the fact that the man with the best memory is not the most able—if by able we mean ability to adjust to a new situation. Memory is a marvelous aid to intelligence, but after all it is only an aid, just as power of decision, power of judgment, imagination, and all the other moral qualities are aids. Intelligence is not a knowledge of facts, or data, or technique. It is not a matter of decision, or force, or loyalty. And yet it is something in which all of these, and other qualities, figure largely. Intelligence is the ability to recall a fact when that fact is essential to the solution of some problem of life, in or out of school. It is ability to make a decision promptly when the situation demands a prompt decision, to postpone a decision when postponement is in order, and to make no decision at all when circumstances make it inadvisable to render a judgment. It is the ability to do the proper thing at the proper time.

The intelligent man recognizes the insurmountable obstacle when he sees it, and overcomes the other obstacles. He dismisses what is over and done with, and abandons a plan that circumstances make impracticable. He takes the offensive when an attack is better than a defensive attitude. He provides an approximate working solution when to provide a perfect one would take too much time.

Our training and inclinations, both native and acquired, make it difficult for us to gain a true knowledge of what intelligence really is, and make it more difficult for us to act intelligently. We do something twice and call it a coincidence, three times and start a habit. From then on we have a guiding rule from which we must never deviate. We live by rule and are thoroughly indoctrinated with the idea that the problems of life can be solved by formulae. "Blessed are the meek for they shall inherit the earth," "The early bird catches

[1] Page 329, INFANTRY JOURNAL for October, 1928.

the worm," "Honesty is the best policy," are but three of our thousands of dogmas, precepts, formulae, canons, laws, regulations, maxims, mottoes, adages, aphorisms, proverbs, apothegms, and principles. Life is filled with them. Get up early, be meek, honest, and a thousand and one other things, and life will be well. Park 20 feet from the fire hydrant, stop on the red and go on the green, and there will be no arrests. Provide for unity of command, a common objective, and economy of force, and you will be a famous general.

Just one generalization after another. Thousands of packages of predigested mental food, which, if swallowed at a gulp, make thought unnecessary. Universal and infallible *guides to action*, good everywhere and at all times. Anything that will save us the trouble of thinking. Or at least something that will save us the trouble of thinking the same ground over again. If we would only stop to think and to analyze the situations with which we and others are and have been confronted, we would find that seldom, if ever, is the same ground covered more than once. We would discover that the hardest thing to find in nature is the normal, and that few situations are identical.

Two situations have certain factors that are glaringly in common, but those factors do not of necessity make the situations similar. In every one there are certain factors which are part of the total occurrence, but which are not significant in relation to the point at issue. All parts of an experience are equally present, but they are not of equal importance as signs or evidence. The glaring factor of the situation may be, in reality, insignificant, and the key to the problem may be some unobtrusive fact or surmise, as any graduate of the General Service Schools can testify. Just because there is a river does not make the answer a river crossing. Just because the division has marched 12 miles does not mean that it should go into bivouac. The answer depends on the whole situation, and the soundness of the solution depends on the solver's ability to evaluate properly all of the pertinent factors of the situation.

The elder von Moltke was an intelligent officer who built a system of command around the principle (guide to action) that the man on the spot was often more capable of coping with the situation than some more experienced and thoughtful officer who was not on the spot. He believed that at times it was better to tell a subordinate where to go and what to do after he got there, and that at other times it was better to tell him what in general was wanted, and why, and let him work out the details. With that idea the great German chief of staff spent his life teaching his subordinates tactics and strategy, and in developing their initiative. He laid great stress on orders and instructions.

Orders were to be issued only when the superior was on the spot and was as familiar with the situation as the subordinate who was to carry them out. Orders were to be obeyed instantly, implicitly, and in detail. Instructions were to be issued when the commander was not on the spot, and was not fully cognizant of the situation, or when there might possibly be a change in the situation before the mission could be accomplished. Upon the receipt of instructions, which were to include clear and comprehensive statements of the situation as it was known to the superior, and were to contain the general mission of the subordinate, the latter was expected to exercise his initiative and judgment and act according to circumstances as he found them. Instruc-

tions, as is evident, required able and intelligent subordinates. Orders did not.

In August, 1914, the rapid advance of the German First and Second Armies resulted in the situation getting out of hand. German G.H.Q. was 200 miles to the rear and out of touch with affairs, and there it stayed while it issued instructions which left the situation in the hands of the army commanders. The glaring factor of the situation, at the distance from which G.H.Q. viewed it, was the ability and professional attainments of Generals von Bulow and von Kluck, so, logically, no orders were issued, only instructions. In reality the important but easily overlooked factor was the need for cooperation and coordination between the two armies, a need that could be met only by the issuance of orders.

So we find that in the War of 1870 the system of command succeeded, and that in the World War it failed. It succeeded because von Moltke was intelligent enough to know when the absent commander should go to the spot and issue an order. It failed because German G.H.Q. was not sufficiently intelligent to see that sometimes even able subordinates require orders.

The intelligent man is he who, without passion, without prejudice, without undue haste, with due regard for the rules if they are applicable, and utter disregard for them if not, refuses to jump at a conclusion, and seeks for the factor which is important in the particular problem he is called upon to solve.

And right there is where men come to the parting of the ways. Pure intelligence is so rare as to be attributed to the Almighty. Through the quality of omniscience He is familiar with the entire situation. His judgments are not colored by doubt, fear, hunger, or other earthly emotion. But men have no such capabilities. No matter how well read or educated, they are limited by imperfect memories, lack of time, physical frailties, and other bounds. They cannot know all of any situation. Frequently, due to passion, prejudice, flippancy, haste, or other cause, they fail to judge properly of the facts they have. The engineer, with his knowledge of structures and materials, builds a bridge that is the marvel of the world. But bridges have been known to fall into the stream because of an oversight of some small but important factor, or because of a failure to question some so-called mathematical certainty. Mistakes of judgment are of frequent occurrence in the realm of science where, compared to an art, there are few factors and many rigid and accurate rules.

But in an art that makes use of rules, or guides to action, but yet transcends all rules, obstacles to sound judgment are as countless as the stars. Lack of technical knowledge, a pain in the stomach, fatigue after five sets of tennis, all have their influence. Napoleon, the third day after the battle of Dresden, was suffering from gastric indigestion and decided to withdraw instead of to advance. Many historians have recorded that error, but few its cause.

No man sees a thing the same way twice. No two men see the same thing the same way. We all hear things differently. "Bay" means one thing to a cook, and something else to a navigator, to a horseman, to an owner of hounds, to a carpenter. The training and educational background of each of us are different. When we pronounce a judgment or make a decision, we do so after placing what we believe to be the proper emphasis on all the factors. But we find that what one man considers important another man considers unimportant,

and a difference of opinion arises. Or we find that one man with a good memory and a broad knowledge has considered something that another has forgotten. Another difference of opinion.

The student lays great stress on the length of the day's march, and goes into bivouac at twelve, noon. The School believes that the capture of Chestnut Hill is important, and marches the division 28 miles. Result—a U. The student splits his forces for reasons that are to him good and sufficient; the School has for this solution a heavily weighted comment, and there is another U.

As long as the School holds the whip hand, the U's stand. And they should stand when the solutions of the student clearly show insufficient emphasis on an important factor. But the factor should be important, and its importance should be determined in the light of history and not be a matter of opinion of a few members of the faculty.

Historical records and the common experience of military men show that, in the long run, victory has alighted most frequently on the standards of those commanders who have preserved the unity of their commands, have taken the offensive, have provided for their security, and have done thus and so. But history also reveals the exceptions. It is these exceptions which rise to confound us. And they will continue to confound us just as long as we attempt to settle things once and for all time, and refuse to be prepared to meet them.

We like to have things settled. It saves time and trouble, gives us a common starting point, and prevents conflict and difference of opinion. But we need expect no such ideal state. Only recently Einstein has upset the scientific world by declaring that mass, time, and space are no longer fundamental and immutable. For all practicable purposes time and space as we have conceived of them have served us well. And in the military world our principles have served us well and will continue to if, like Einstein, we are on the watch for the exceptions and, like Lee, ready to meet them.

The famous Southern commander and leader once found an enemy force astride a river, a situation which since time immemorial has called for the standard solution of an immediate attack. But Lee, an intelligent general, was prepared for the exception. He refused to jump at a conclusion based on the seeming importance of the glaring factor. Instead he weighed all the factors and found an insignificant Wilderness. He allowed Grant to cross the Rapidan with his entire army and all its impedimenta. And to this day writers and students of military history question the judgment of the Confederate commander. They apparently do so for no other reason than because Lee's action was exceptional. They praise his boldness but not his intelligence, without seeming to realize that boldness at the proper time is intelligence. In the long run it may be well to strike the enemy while he is astride a stream, but Lee recognized the exception and defied the rule.

In Italy, Napoleon attacked the smaller of two forces, defeated it, turned on the larger, defeated it, and thus accounted for both. The Corsican had been taught that when in the presence of two forces he was first to engage the larger one, but he was intelligent enough to see and meet the exception. Napoleon defied not only that rule, he defied others.

And so from the military standpoint we face the age-old problem. Is the number of intelligent men so small that

we are justified in overlooking them on the ground (1) that they will develop in spite of rules, and (2) that rules are necessary for the guidance of the many unintelligent men? Since we have had a Lee, a Caesar, a Napoleon, are we to trust to future chance the opportune appearance on the field of battle of other great captains, or are we to do what we can to develop them?

The answer to me is obvious, and is based on our needs. We need, of course, an intelligent commander-in-chief. But we also need many Colonel Napoleons, Major Napoleons, Captain Napoleons, and Napoleons in all grades down to and including that of private. We need, in other words, intelligent men capable of adapting themselves to the situations they meet.

We tell a soldier to hide in a shell hole and to advance to the attack. How does he reconcile that conflict of instructions? He does not unless he is intelligent enough to recognize the circumstances under which one solution or the other is the better one.

We tell the student that the spirit of the offensive is important, and then give him a problem illustrating a defensive situation. How does he reconcile the two? He may recognize the exception to the principle of the offensive and defend, or he may say to himself, "If I defend, and the answer is an attack, I will get a U. If I attack, and the answer is to defend, I may get an S." From the standpoint of marks and class standing, the student may be considered intelligent if he attacks. From the standpoint of emphasis on the principle of the offensive, the School may be considered intelligent if it awards an S to the attacker. But from the standpoint of training the solver's powers of decision and initiative, and of teaching him to act in accordance with circumstances, the School has failed in an important function if it countenances anything but a clear-cut and accurate decision. While stressing the rule of the offensive, it should not neglect to emphasize the real situation, which is that there are exceptions to all rules, which must be recognized if real success is to be attained. Failure to recognize them is a sign of lack of intelligence.

It seems to me, therefore, that we must not trust to chance, but must do all that we can to develop the Napoleons we shall need. The best way to start is by teaching the true nature of war.

War is just another of life's activities. It is an art like painting or sculpturing, but a million times more intricate. It has rules, but they are elastic. War defies allegiance to any settled or determined guide to action. Its very nature stultifies any attempt to include in a meaningful general truth its myriad activities. To say that a principle of war, as a general truth, is immutable and infallible is to say that what has been written is intelligible, without amplification, only to the writer. The statement that a principle of war, as a guide to action, is infallible and immutable is nonsense, an insult to the intelligent man, and dangerous doctrine for the unintelligent one.

Our so-called principles are excellent guides, and will doubtless serve us as well in the future as they have in the past. But they are not infallible or immutable. If, by any stretch of the imagination, principle, or any other word, can convey that idea to anyone, the word should be abandoned. It is as true today as it was when Confucius spoke, that, "If words are misused, affairs go wrong."

A New Weapon of Warfare—the Mechanized Force

MAJOR LEVIN H. CAMPBELL, JR., Ordnance Department[1]

SINCE the war the design and construction of tanks and self-propelled track-laying fighting vehicles of all sorts have made great strides. The developments in particular types have led quite naturally to a study of the tactical employment of units equipped with them. From this has been evolved the term "mechanization," which, as applied to the Army, is defined as being the "application of mechanics directly to the combat soldier on the battlefield."

The tactics of tanks during the World War prescribed that they advance with the infantry in the attack. But terrain most suitable for an infantry advance should afford cover for the soldier, while terrain most suitable for tank advance has a minimum of inequalities. Therefore, under World War tactics either the advancing infantry or the tanks were under a disadvantage. While the tanks of that day were very crude and slow, their rate of advance could have been greater than that of the infantry if the two had not been tied together. As we now have armored vehicles and tanks with speeds as great as 20 miles per hour over favorable terrain, it would appear that the tactics for the employment of such vehicles should be radically changed.

Mechanical dependability of all vehicles of a mechanized force is held as being of paramount importance. Since the war such dependability has greatly increased. Recently one of the light tanks has completed a test run of 2,000 miles at high speeds, without major overhaul. The war-time tank usually required a complete going over after 50 to 60 miles of operation. It is estimated that, in a major engagement, a tank will travel about 50 miles.

The performance specifications of modern-day armored vehicles appear to call for the separation of infantry and tanks in tactical operations. Armor protection and speed are the greatest guarantees of the safety and effectiveness of the tank, and therefore the best terrain available within the battle area should be selected for its field of operation. The infantryman, on the other hand, in order to survive machine gun fire, will make use of all natural cover afforded by the ground itself. It will, then, often be necessary to use the infantry and the tanks in different sections of the battlefield, even though their objectives may be the same. This means that armored fighting vehicles must be organized into units of one kind, and infantry into organizations of a totally different kind. It is apparent that infantry will be unable to keep up in a movement in which vehicles operate at speeds of from 15 to 20 miles an hour during the battle.

In order to be effective as an integral fighting unit, the mechanized force must contain elements for high-speed reconnaissance and high-speed attack. It must afford within itself supporting

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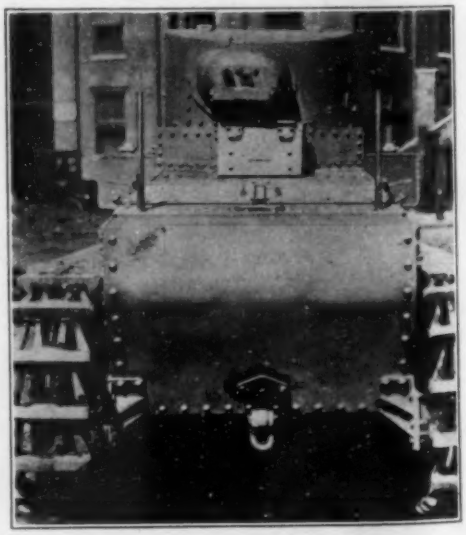
THE CHASSIS OF THE LIGHT TANK T1E1

fire for the attack wave, and it must be provided with high-speed armored vehicles to carry machine gun squads forward for the occupation of the ground gained in its attack. The tank presents too great a target to be used as a holding force.

What vehicles are there, and what should be developed and united to form a mechanized force? An ideal condition would exist if it were possible to use only vehicles found in commercial production. The idealistic requirement that all items of ordnance equipment for the Army should be available or readily produced in time of war would be fully met. The Ordnance Department therefore maintains close contact with developments in the automotive industry. Unfortunately the commercial world does not require high-speed track-laying vehicles such as the tank, the self-propelled gun mount, the armored infantry carrier, and other types of vehicles which will properly be found within a mechanized force. The specifications must, therefore, be set up by the using Services, and the Ordnance Department must produce the special vehicles thus required. However, we can go and have gone a long way in reducing the war production difficulties in the development of a track-laying chassis which is readily adapted to a wide variety of uses.

The light tank chassis, T1 E1, carries interchangeably, with relatively few modifications, a tank body with armament, a divisional gun, an ammunition body, which also serves to carry spare parts, gasoline, oil, portable bridge equipment, signal wire, machine gun mounts for antiaircraft fire, the Chemical Warfare Service smoke shell mortar, and so on. By the use of such a chassis, the production and maintenance problems are greatly lessened.

Funds have not yet permitted of the development of the armored infantry carrier, but such a vehicle does not offer any great difficulties in design. After the tanks, supported by the self-propelled accompanying artillery, have gained the objective sought, it will, of course, be necessary to occupy the territory with machine gunners and automatic riflemen. These little armored infantry carriers which we have in mind will be for the purpose of transporting such squads behind armor protection to the line which it is desired



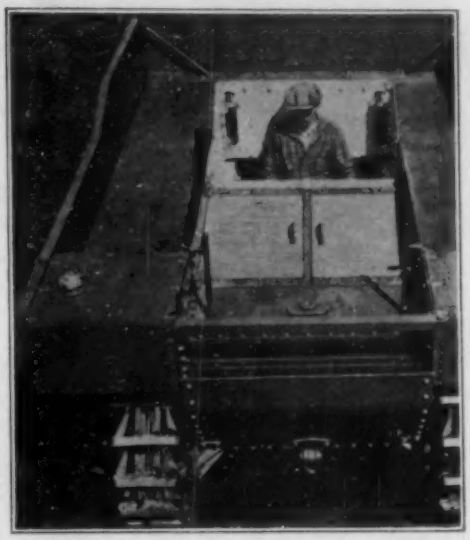
THE TANK HULL ON THE CHASSIS OF THE LIGHT TANK T1E1

to hold. The speed of the vehicles will be at least equal to that of the light tanks, and the weight will be as little as dependable design will permit.

The 75-mm. gun will be mounted on the light tank chassis and will, therefore, have the speed of the light tank. Supporting fire for the tanks will be always at hand. Ammunition will be supplied to these guns by the cargo carrier.

In an effort to assure control of this rapidly moving force by the commander, wire reels will be mounted on one of the track-laying cargo carriers so that the laying of wire may keep up with the advance. A command tank will be developed with the light tank chassis as a basis. Control will also be assisted by radio tanks on this chassis. Only by actual maneuver under variously assumed battle situations can the equipment and the technique of control be worked out.

In movements of the mechanized force over great distances it will be far more economical to carry the track vehicles of the force on wheeled trucks or trailers. For this reason the weight of each unit should be held to within the capacity of the commercial truck. It is quite true that the new light tanks completed a road march of 145 miles in two days at an average speed of 10.5 miles per hour during the past summer. We must bear in mind, however, that the hard road is the element for the wheeled vehicle rather than for the track vehicle; hence use of wheeled transportation for great distances should be axiomatic. When the track vehicles have arrived at their immediate theater of operations they will leave their wheeled transport and carry out their battle missions. The trucks

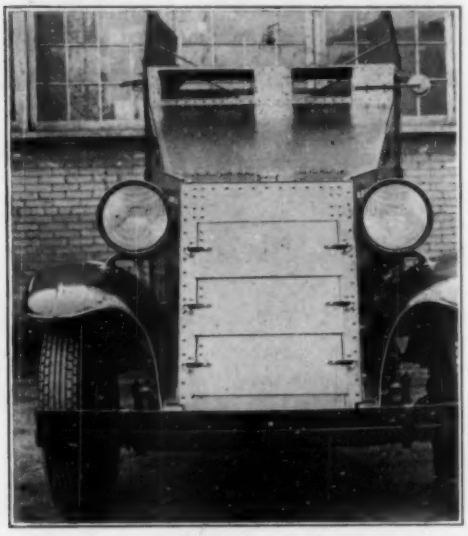


CARGO BODY ON THE CHASSIS OF THE LIGHT TANK T1E1

will then be sent back to the base and will return with the necessary gasoline and oil to permit of extended maneuver by the mechanized force. The supplies will be unloaded at the side of the road, and the track cargo carriers will carry forward from that point.

A vehicle of great usefulness within the mechanized force will be found in the self-propelled multiple machine gun mount on the light tank chassis, T1E1. All marching columns in another war will be subject to attack by hostile planes. The multiple machine gun mounts will serve to hold the planes at a greater altitude, which will make their bombing and machine gun operations less effective. The mechanized force, being composed entirely of track-laying machines, can, upon the approach of hostile planes, immediately leave the roads and present a widely dispersed target to the attacking planes. The antiaircraft machine gun mount may also be used against ground targets.

In adopting and organizing a mechanized force, the Army is merely paralleling industry in its effort to increase the (fire) power of the individual. It has been computed that the fire power of a light tank company of 112 men is seven times that of an infantry rifle company of 256 men, as expressed in pounds of metal thrown per minute. We must add to this figure the great destruction of morale that an armored vehicle rushing at high speed will produce on the enemy's troops. No longer will the machine gun be able to hold



THE MEDIUM ARMORED CAR

up the advance, for the tank will be impervious to its fire. Indeed, it will be difficult to hold the machine gunners to their posts in the face of such an assault. It will be impracticable for field artillery guns to register upon the fast-moving mechanized force, which will normally launch its attack as a surprise. The self-propelled 75-mm. gun mounts will closely support the attack of the tanks with their fire, as they can be moved forward from one position to another in a minimum of time and at the speed of the advancing tanks. After the tanks have gained objective and the machine gunners, who have been carried forward in the armored infantry carriers, have occupied the ground, the supporting 75-mm. guns will assist in beating off counter-attacks. They will hold their position until relieved by the wheeled carriages of the field artillery. The operation of the mechanized force requires a smaller number of men, and consequently the battle losses will be very materially less. The personnel will be protected by the armor and speed of their vehicles, and their objectives will be gained in much less time.

The mechanized force will secure reconnaissance by the use of attached airplanes, by its wheeled armored cars operating over improved roads, and by its tanks. The latest type of armored car is an armor plate hull on a La Salle passenger car chassis. These cars will normally operate far in advance of the mechanized force and will reconnoiter the highways to the front. Track-laying vehicles will make up the combat units of the force. Under favorable conditions of dry ground the wheeled vehicles will leave the road and operate across country. The necessity of military operations in time of war is, however, unfortunately not limited as to fair weather and dry ground. The track-laying vehicle possesses greater ability to negotiate soft ground successfully than any other man-made machine that is suitable for the armored force. Surely the mechanized force will have no vehicle within its combat organization which does not measure up to the requirement that it contain within itself the full limit of the art as regards cross-country mobility. There is no question but that wheeled vehicles

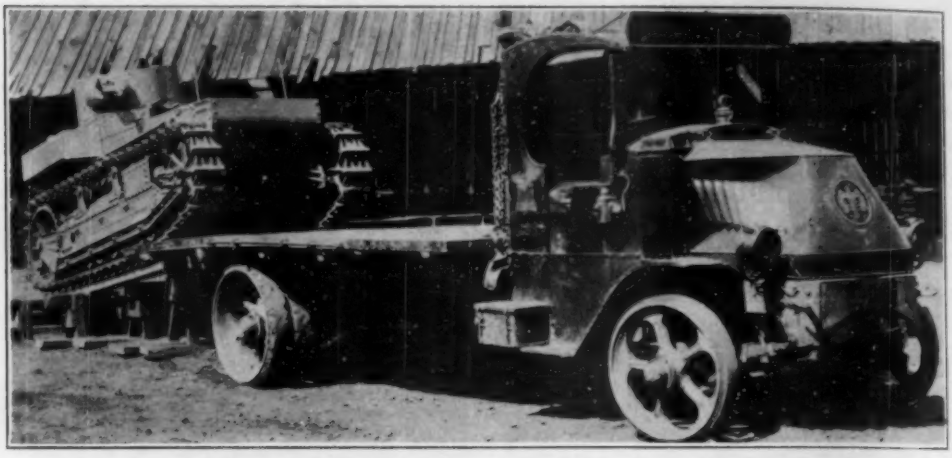
are much more economical of operation on hard roads than are track-laying vehicles. But the primary sphere of operation of the mechanized force is not on the roads; but rather is it *off* the roads. Consequently it will be composed of vehicles of the most efficient types designed to carry out the recognized purpose of such a force.

The ideal combination in a vehicle is one that will permit of efficient operation both on the roads and across country. Such a combination is to be had in a wheeled vehicle which is adapted to receive a track over and around all of its wheels. Much time and money have been spent both here and abroad in the development of such a combination. If the necessity for the use of such a vehicle within the mechanized force should develop, the engineering ability that is to be had will doubtless evolve a satisfactory machine.

For reconnaissance well to the front of the mechanized force, a possible combination is offered by using a commercial truck to transport the light tank. While traveling on the road, should a more detailed reconnaissance to either flank be required, the tank is run down off the truck and proceeds under its own power to gather the information desired. The reconnaissance is made behind armor plate protection and at a relatively high speed. Upon accomplishment of the immediate mission the tank returns to its place on the truck, and reconnaissance is carried further to the front. The advantage of using such a combination lies largely in economy in the use of vehicles that are available. The commercial truck and the light tank must in any event be pro-

THE LIGHT TANK GOES THROUGH MUD AND WATER

THE LIGHT TANK GOING UP



THE LIGHT TANK ON A COMMERCIAL TRUCK

vided for other necessary uses in the Army.

The weapons of the soldier of the mechanized force will be the machine gun and the automatic rifle. The tanks will be equipped with semi-automatic cannon. The force will thus have within itself the maximum of fire power as expressed by the most modern weapons.

The force, with its mobility and fire power, will prove most valuable in advance and in rear guard actions. Its use by the advance guard will assure a practically uninterrupted advance of the main body until such time as serious resistance is met. As a rear guard, the force will delay the enemy's pursuit sufficiently to permit of the uninterrupted and unharassed retreat of the main body. The great speed of the mechanized force will make it of particular value in turning movements and in envelopments.

The medium tank of 15 tons in weight is too heavy for truck transportation, and as such will not be a part of the mechanized force. Medium tanks will be attached upon occasions when heavy resistance is to be overcome. With their heavier armor and 3-pounder guns they will lend greater striking power to the force. Their speed will be sufficient to let them advance at the rate set by the other units of the mechanized force. The Chemical Warfare Service smoke shell mortar, when mounted on the light tank chassis, will be an important unit with the force. Losses in tanks and other vehicles will be greatly lessened by the correct use of smoke in the battle.

A mechanized force will most certainly not revolutionize warfare; it will prove but another weapon of great power at the disposal of the commander. Obviously, changes in tactics must be made to incorporate the force in the Army correctly. Not until such a force has been organized and equipped with modern vehicles can its full use be understood and appreciated. We may all theorize and we are all entitled to our individual opinions, but the words of Admiral Mahan seem to be particularly applicable to this whole subject of mechanization:

The student will observe that changes of tactics have not only taken place *after* changes in weapons, which necessarily is the case, but that the interval

between such changes has been unduly long. This doubtless arises from the fact that an improvement of weapons is due to the energy of one or two men, while changes in tactics have to overcome the inertia of a conservative class; but it is a great evil. It can be remedied only by a candid recognition of each change.

Many officers of the Army, through lack of opportunity for observation of modern automotive equipment, are prone to judge tanks and other armored vehicles by the performance standards of the war-time vehicles. This leads to gross errors in evaluating the possibilities of the situation. We all recognize that the automobile of 1929 is vastly superior to that of 1916. The present-day armored fighting vehicle may be considered equally so. Col. J. F. C. Fuller, B.C.E., D.S.O., is authority for a statement to the effect that even in World War tanks the casualties of the Tank Corps were the lowest in percentage of men killed to total casualties. If those crude machines served to lessen the battle losses, surely those of this modern day will be even more effective.

To quote from Colonel Fuller's highly interesting book, "On Future Warfare":

> Economy in man power, both fighting and manufacturing, is in itself an enormous economy in money; nevertheless, I will now take a more concrete case. During the war, on an average a shell cost £5 and a tank £5,000; consequently the cost of one tank was equivalent to the cost of 1,000 shells. A shell once fired is totally expended; a tank, accepting a very conservative reckoning, fights four engagements before being wrecked. Therefore, the cost of one tank is approximately the equivalent of 250 shells; consequently, had the cost of the 4,283,500 shells fired in the preliminary bombardment of the third battle of Ypres been spent on tanks, 17,134 machines could have been produced. At the battle of Amiens, August 8, 1919, which Ludendorff christened "The black day of the German Army," only 415 of these machines were used, and with decisive results.

Even with the great wealth of our country we cannot afford to keep a military establishment equal to that which we shall need to prosecute a major war successfully. We can afford, however, to equip and maintain a small modern mechanized force, which will serve as a laboratory for the development of machines and the training of personnel in the tactical employment of such an arm. To the establishment of the Army charged with the design and procurement of such vehicles in time of war, the peace-time development of but a few of these vehicles will be of inestimable advantage in reducing the time required to reach quantity production.

We should not wait until the ideal is reached in automotive development. In an industry which is making such rapid strides this will never occur. We should not be deterred from entering into the procurement of the necessary vehicles for a well-organized and well-equipped mechanized force. We should make a start; the developments and logical improvements will follow rapidly.

During the summer of 1928 a small force, equipped with motor transportation and tanks, was assembled at Fort Leonard Wood, Maryland. The equipment was largely of war-time construction, which, in large part, precluded obtaining a correct picture of the capabilities of a modern force. Many valuable lessons were learned, however, and a start was made in the right direction. When funds become available for the supply of modern equipment, the full possibilities of such a force will be recognized.

National Defense—1775-1929

154 years of American military policy

LIEUTENANT C. G. FOLLANSBEE, Field Artillery

I

THE World War has given rise to an unprecedented volume of literature, fiction, and movie plots. Never before in the history of the world have so many billions of words been written and spoken on any one subject, unless it be the state of weather. The halls of Congress echo with the mighty orations of the legislators extolling the deeds of our war-time army; after-dinner speakers constantly add new references to our accomplishments in France; veterans weave long yarns to their friends and to their wives and children about their parts in the great adventure. The theater and the popular magazine complete the story and supply the details. Never before in our history have the American people known so much about their war-time army.

But pitiful in contrast is the amount of literature which tells the story of our great unpreparedness in 1917, of the waste occasioned by our frenzied, last-minute efforts to put ourselves into the conflict effectively. The thirteen months that elapsed between our declaration of war and the appearance of an effective American army in the lines are passed over as of no consequence, as is the fact that during this long period of preparation our Allies were holding the enemy —for us as well as for themselves!

Business cries for lower taxes; the average citizen is engrossed in the pursuit of prosperity; Congress discusses the tariff, flood control, farm relief, tax reduction, and economy. Which is all very well. But the foundation of prosperity—national security—arouses only passive interest. The military branch of the public service receives little attention—except to be regarded as a tax-eating evil of doubtful necessity. In short, the American of today, like his predecessors of 1790, 1830, 1850, and 1900, knows too little about his Regular Army, and utterly fails to appreciate the importance of military defense in the scheme of his happiness. A hopeless and incurable optimist, he readily believes that which he so ardently desires—that there will be no more war; that if there should be war, "Well, haven't we won every war we have ever been in?" Lulled into this sense of security, he is only too glad to forget the Army and its problems. The war is over; a soldier is only a public charge in an unattractive khaki uniform.

But the Army is not utterly discouraged. This condition is not new to it. After every war in which the nation has engaged the Regulars have suffered the same lack of public sympathy and support. Fallen into neglect—but not into inefficiency, thanks to the patient patriotism of the Army and its relatively few staunch supporters in high public office. This is the state of things today, a short ten years since we were scorched by the flames of war. And we were not burned! France was blistered and withered, England was severely burned; but we, thanks to them, were only singed.

EARLY MILITARY POLICY

It is interesting to trace the progress of our national military policy from the

days of the Revolution to the time of the passage of the National Defense Act in 1916 and its subsequent amendment in 1920—progress made in spite of a traditional prejudice against professional armies and an inherited neglect of preparation, in time of peace, for the emergency of war.

Before the Revolution there were no well trained military forces in the colonies except the British troops. The only men of real military experience were those who had participated in the French and Indian wars of the middle of the eighteenth century. Indian fighting and marksmanship were the only soldierly qualifications of these veterans, who were soon to meet well trained and disciplined civilized troops in what was then modern warfare.

In the few years immediately preceding the war, when trouble began to brew with the mother country, many communities in the several colonies organized companies of militia. These companies received comparatively little training under leaders of questionable military qualifications. When the war finally broke out the colonies offered a commission to any man who could raise a body of militia. In Massachusetts any man who could gather sixty men was given a captain's commission, and any man who could gather 600 men a colonel's commission. Like many of our honorary colonels in public life today, these leaders were simply men whose influence, or even wealth and social position, enabled them to strut about in front of a motley collection of would-be soldiers, wear the uniform of an officer, designed mainly along lines of their personal tastes, live in comfort while their men existed in squalor and hunger, and receive the favoring smiles of the ladies. They usually neglected the welfare and training of their men. In battle, these inexperienced leaders were often brave and displayed qualities of leadership deserving of victory, but their commands were untrained and undisciplined and could not be relied upon. In camp, however, these same leaders thought it beneath their exalted stations to minister to the needs of their men and to engage in the monotony of drill.

In Maryland, officers were elected by popular vote, just as the town officials were. As for the generals of the Revolutionary Army, they were chosen variously, some by the colonial governors and some by a Continental Congress which was not so much concerned with their military ability as with their influence. The election of Washington as commander-in-chief was the only commendable selection they made, and that seems to have been more a matter of compromise among jealous contenders than a careful choice based upon military merit. In any event, Congress blundered into a wise choice of the best qualified man in America.

The troops thus raised and officered took the field against the English only with the consent of their colonial governors or legislatures. And on many an occasion in the Revolution the militia of a colony was not allowed to leave its own colony to fight the English; in fact, the militia itself often refused to fight anything but a defensive war. There was no uniform training, no standard equipment, no uniforms, and very little cooperation. The militia, who were enlisted for only short periods of service—averaging only three months—sometimes did not wait for their terms of service to expire, but left and came back at will. Those who did not come back were not pursued, and Washington

found it entirely useless to try to depend upon them in an emergency. The Continentals or Regulars, who were State-raised troops enlisted for three years or for the duration of the war, were unable to keep up to strength. In those days there was no such thing as conscription or draft, and Young America had to rely on volunteers. Naturally, very few men would volunteer for service in the Continentals for three years, when they could just as well enlist in their colonial militia for three months. The bounties offered by the colonies for enlistment in the militia were far beyond and above anything that the Continental Congress could offer or hope to pay. Discipline was much more lax in the militia, which was another fact not overlooked by the liberty-loving colonist. Personal liberty seemed to be more important than national liberty.

As might be expected in a conflict where the people were so divided in sentiment, the issues so incomprehensible to the average man, and the outcome so uncertain, hearty cooperation among the militia of the several colonies and with the Continentals was difficult to obtain. Had it not been for the patriotism and abilities of Washington and other generals and statesmen, and the help of Steuben and La Fayette, the efforts of the colonial forces could not have been coordinated to such a degree that the British were finally outstayed.

At that, the Revolution was won only nominally. The English lost several battles, to be sure, but the Revolutionists were constantly in such a weakened condition that a determined effort by England at any time during the war would have ended the resistance in short order. The British, partly because of their failure to appreciate the value of their colonies, partly because of the divided sentiment in England, and partly because of a European war in which they were engaged, let the colonies slip from their fingers, walked out, and left the Americans the "victors."

Immediately upon the cessation of hostilities and before the British had even left the country, Congress ordered that the remnants of the Army be immediately furloughed or discharged, leaving only 1,000 men to guard the new-born nation, and allowing the rest to go with a valueless promise of back pay.

When Clinton embarked for England in 1783, Washington entered New York with less than 1,000 men—the entire army! Congress then ordered the Army disbanded and, in 1784, authorized a standing army of 80 men to guard the magazines and stores at Fort Pitt and West Point. Eighty men to guard an infant nation of 3,000,000, whose frontiers were teeming with hostile Indians and British! This was the military's first taste of the American habit of throwing away their army when the immediate need seemed past.

The history of the American Revolution should have illustrated for all time the fallacy of basing the national security upon so shaky a foundation as untrained militia and inexperienced leaders. It should have pointed out to all intelligent Americans of that time that in order to be ready for war preparation must be made in time of peace, that men cannot be raised and trained when the nation is under fire.

Between 1786 and 1792 the strength and composition of the Army varied with the situation on the frontiers. When the Indians became threatening, Congress legislated into being citizen armies which it promptly disbanded when the emergency seemed ended. The history of these Indian campaigns re-

cords great needless suffering and loss of life, the consequence of unqualified leaders and lack of training.

In 1792 a Regular Army of 5,000 men, to be raised by the States on a quota basis, was authorized—but never raised. The States did not raise their levies and the Federal Government did not insist.

Congress and the country seemed to be satisfied that national security was assured when, in 1792, Congress passed a law which provided that every able-bodied male citizen between the ages of eighteen and forty-five should be enrolled in the militia of his State by the captain of the company in his community—"That such citizen, so enrolled and notified, shall within six months thereafter provide himself with a good musket or firelock, a sufficient bayonet and belt, two spare flints and a knapsack, a pouch with a box therein to contain not less than twenty-four cartridges—."

The country was still relying on a paper militia in spite of the lessons of the Revolution and heedless of the advice of Washington—a militia to be organized by indifferent states, in which the individuals armed themselves and in which the officers were to be men of influence appointed by politicians! As a law, the act of 1792 was a mere scrap of paper, but it remained in the statutes until 1916. From 1792 until the outbreak of the War of 1812, the Army jumped forward and fell back intermittently—on paper. Congress legislated armies into being—and then took a sponge and wiped them off or failed to appropriate the money necessary to pay and feed them. When England, France, or Spain shook the mailed fist, Congress frenziedly passed laws creating imaginary forces to meet the threat. Fortunately the threats were never carried out.

THE WAR OF 1812

The opening of hostilities with England in 1812 found us with a Regular Army of 3,000 men, scattered along a frontier from which they could not be removed without inviting certain Indian invasions and depredations.

Congress despairingly called on the States for troops. "Raise them and officer them yourselves, but in heaven's name let us have them," was the attitude.

The Governor of Massachusetts replied to this call in part as follows:

> The people of this State appear to be under no apprehension of an invasion; several towns indeed, on the sea coast, soon after the declaration of war applied to the Governor and Council for arms and ammunition—and in some instances they were supplied accordingly. But, they expressed no desire that any part of the militia should be called out for their defense, and in some cases were assured that such a measure would be disagreeable to them.

The Governor of Vermont ordered the militia to return to their homes, stating that "The military strength and resources of the state must be reserved for its own defense and protection exclusively."

Other States failed to cooperate and in many instances would not allow their militia to fight off their "home grounds." They refused to invade Canada. Some States even made it an offense for a militiaman to serve the Federal Government!

To the citizen of 1928, this is inconceivable—this entire lack of a national patriotism, this failure to appreciate the value and benefits of the Union, this shortsighted and selfish policy.

So most of the battles of the War of 1812 were fought by hastily gathered civilian forces, that could be used only in their home states, and when the scene of battle shifted to another State, they disbanded and allowed the next State to take up the burden in an equally frenzied way.

Is it any wonder that the battles of this war make very humiliating reading for the descendants of these short-sighted and narrow-minded leaders of 1812? Is it amazing that, with aged and weak leaders, those mobs of citizen soldiers fled at the first volleys of the enemy, often before greatly inferior forces? As individuals, these citizen soldiers were in every way the equals of the Doughboys of 1917, but they lacked training, discipline, and permanency of organization; they could not face the trained forces of the British. Moreover, the costly habit of appointing officers and generals on the basis of their political influence and social connections was still in vogue. Inaction, indecision, pessimism, and lack of military ability characterized nine out of ten of the officers in this war.

About 450,000 of this catch-as-catch-can militia were employed during the two years of war. In addition, some 50,000 Regulars were raised during the struggle. The Regulars had no previous training and were thrust into the campaign equally unprepared, but their longer terms of service and a leavening of 140 West Point graduates as their junior officers gave them, in the latter part of the war, training and discipline that proved effective in the closing engagements. This combined force of 500,000 Americans finally "overpowered" the 60,000 British engaged; and thanks to the Navy, England's exhaustion from Continental strife, and the friendly mediation of Russia, America had again "won" a war!

At the end of 1814, the Regular Army numbered a little over 30,000. Congress with unexpected foresight authorized the standing army to remain at a strength of 10,000; but by 1817 the increasing feeling of security had reduced this force to 7,000, and in 1820 to 6,000. This was the sole protection of a nation of more than 7,000,000 people spread from Canada to Florida and from the Atlantic to the Northern Rockies, with hostile Indians in the west and the south and with a seacoast nearly 3,000 miles long. Economy was then, as now, a popular issue; it was then, as now, carried to such an extreme that it should have foretold the great economic waste that was bound to be the result when war again threatened. To save a few thousand dollars in time of peace, and consequently to waste millions in time of war, seems to have been then, as even now, the prevailing idea of economy.

In 1834 the Regular Army had dropped to 4,000 while the population had increased to 15,000,000. Whenever the Indians took the warpath, in the west or in Florida and along the Gulf Coast, untrained and unhardened men were gathered locally, rifles were thrust into their hands, and they were led out to the slaughter by inefficient leaders. In the south during the Seminole Wars nine men fell prey to disease to every one who fell before the bullet of the savage. Discipline, training, and physical preparedness are fully as necessary to the health of the soldier in the field as are doctors and medicine. These qualities and commodities were very scarce in those campaigns.

From 1834 to 1842 the Army was in-

creased gradually by the necessity of subduing the increasing depredations and uprisings of the savages, until in the latter year our Regular forces numbered 12,000. When the Seminoles were finally beaten, Congress promptly reduced the Army to 9,000. The population of the country was then 17,000,000.

In spite of this frequent increase and decrease of the Army, causing, as it did, periodical reorganization and redistribution of forces, the little Regular Army carried on and made up in its great accomplishments for its lack of numbers. The Army explored the continent west of the Mississippi. The settlers, under the protection of the Regulars, were able to build up thriving communities, clear the forest, and put millions of acres of rich land under cultivation. The south was made safe from the Indians. War with England was on two occasions averted by the readiness and ability of the Army to restrain some rash Americans who were about to mix in a proposed revolt of Canadians from the rule of England. The small but well-disciplined Regular Army, by its very presence, assisted materially in the preservation of internal order and peace and, by its diligence and professional pride, gave us the nucleus of a force with which to fight the Mexican War.

THE MEXICAN WAR

Thanks, then, to the necessity of fighting Indian wars in the years immediately preceding the outbreak of war with Mexico, we had 5,300 trained soldiers, with one of the ablest military leaders in our history as major general in chief. Moreover, there were some 500 graduates of West Point in the Service and as many more in civil life who quickly came back to the service when Congress, after nearly a year of war in Texas, called for 50,000 volunteers to serve for twelve months. Militia was also called for six months' service. The War with Mexico was fought with some 50,000 Regulars enlisted for five years, 10,000 short-term and worthless militia, and 60,000 volunteers who received a fair amount of training and preparation before being thrust into the campaign.

The United States forces won every important battle of the war, and in most instances against greatly superior numbers. The conduct of the war showed more military sense than ever before in our history, and in most ways more wisdom than was demonstrated in our next war fifteen years later. The value of training and discipline was amply proven when Gen. Winfield Scott took a small army of Regulars and trained volunteers, landed at Vera Cruz, cut straight through the heart of Mexico, marched in the face of superior forces of the enemy, won a series of victories in a hostile country, and then marched into Mexico City to dictate a peace which gained for the United States territory which was to become the rich states of California, Arizona, New Mexico, Texas, Nevada, Utah, and Colorado.

The Mexican War marked a very decided step forward in our national military policy. The improvements included greater dependence upon Regular or professional soldiers, recognition of the need of training and discipline for raw troops, its use of Regular Army personnel as instructors and leaders of volunteers.

Trained troops and qualified leaders had for the first time in our seventy years of national life really won a war for the United States.

In 1848, after the signing of the treaty of Guadalupe Hidalgo, the Army was

reduced to 8,000 and given the gigantic task of holding and guarding the newly acquired thousands of square miles of territory in the west and southwest. Hostile Indians had to be placated or driven back; settlers had to be protected as they extended the empire. Roads had to be surveyed; the unruly Mormons in Utah had to be subdued and brought under the government of the United States. On the northwest boundary we were engaged in a dispute as to boundary and fishing rights, which was to no small degree settled favorably by the influence of our armed forces in that part of the country.

The year 1860 found us with a regular army of 12,000 men, widely scattered in small detachments, none of which had been trained in the last fifteen years as parts of larger forces. Trouble was brewing between the North and the South over states rights, and there was disorder in Kansas which only the Regular Army prevented from being a bloody war of long duration. Some 12,000 men held back the savages in the wilderness and guarded 5,000 miles of seacoast and 5,000 miles of border—12,000 trained men who could not well be spared from their frontier duties! Most of the officers of this force had no experience in handling bodies of men larger than companies or battalions. A war was in the offing which was going to require the skillful handling of brigades and divisions. But Congress and the administration, ignoring all the ominous rumblings and warnings, slept blissfully on, making no provision for raising and training the larger army which was to be needed.

Part II will appear in the "Infantry Journal" for May, 1929.

Infantry Forward!

From the Notebook of "General Experience"

THE number of new weapons developed during the World War and the interest of mechanization have sometimes led to statements that the importance of the rôle of infantry is diminishing.

Progress in military art is an admirable thing and deserves the heartiest support. Nevertheless one must be careful in drawing conclusions. So far nothing has been developed which lessens the position of the infantry as the major arm in land warfare.

Trail Reports in the Canal Zone

A Trail Reporter

SOONER or later after reporting for duty with the Infantry in the Canal Zone, an officer has occasion to use or make a trail report. Since these reports are not commonly used throughout the Army, and since they are of great value in tropical service, a description of them may be of interest to those officers who may be expecting a tour of service in the land of the Conquistadores.

Before entering on this description I wish to extend apologies to the Engineers of the Canal Zone, who learn more about trail work in one season than the Infantryman in his whole tour of service, and who are responsible for those extremely accurate maps which we shall presently discuss in comparison with the trail report.

A trail report may be described as a reconnaissance report gone to seed. Consisting, as it does, of a minute by minute description of the trail, landmarks, and terrain features, it is really a narrative of the distinctive peculiarities of the route. Containing no maps and few, if any, sketches, it varies widely from the accepted idea of the reconnaisance report.

A pertinent question, "Why not use the map?" was recently asked by an officer just before his first trip into the *bosque*. The answer is, "By all means use the map for general reading and orientation when the opportunity presents." That part of Panama which most concerns the Infantry is well mapped; indeed, considering the character of the terrain, it is very accurately mapped. However, the use of maps in the jungle is limited for several reasons—lack of visibility, lack of landmarks, peculiar terrain formations, deceptive qualities of Panamanian miles, and constant trail changes.

To apprehend what is meant by lack of visibility one must realize the profusion of plant life in Panama. The vegetation ranges from plantations of bananas or sugar cane, through wild cane, tropical grass, and second growth, to virgin jungle, the latter predominant.

In banana plantations one may see only objects at 50 feet and the more distant ridges. Second growth in a once cleared area is similar except that close range visibility is even further limited. In sugar cane, only distant ridges and the trail ahead may be seen. A wild cane brake shuts off all vision except on the trail proper.

The jungle varies from mangrove swamps on the beach, through palms of many varieties, "wild bananas," fern trees and small softwood timber, to the tall hardwood and rubber trees on the higher ridges. This mass of plant life is interwoven with vines and creepers, dotted with patches of thorny wild pineapples, and interlarded with tall ferns. It is easy to appreciate that vision will vary under such circumstances in inverse ratio to the amount of undergrowth. Hence, in tidal regions, vision may be limited to 10 feet among the lush growth of the marshes, while under favorable circumstances it may be extended to 200 yards on the higher ridges where the lack of sunlight has discouraged the smaller plants.

The trails through this terrain are mere footpaths, those more frequently used being 2 to 3 feet wide and well worn. Those in the jungle proper are often to be followed only by watching for old blazes, cuts, or lopped twigs, since no trace of a path can be seen on the forest floor. This, unless one has served an apprenticeship in the Boy Scouts, is often difficult.

For the efficient use of maps, landmarks such as the works of man or distinctive terrain features are vital. The narrowed vision which is the usual condition on the trail prevents the use of natural landmarks except under the most favorable conditions. Owing to the general lack of artificial landmarks, the reconnaissance party, except when in the vicinity of settlements, must depend to a large extent on natural trail peculiarities and the relatively unimportant landmarks on or near the trail. Even these are sometimes scarce, since in a forest of large trees to use a tree as a landmark is as useless as to call attention to a small stream in this land of heavy rainfall.

Therefore the traveler must depend on a sequence of minor features, such as streams, fallen trees, deformed trees, ant hills, ridges, wild pineapple patches, and rock formations, to guide him when off the beaten track.

Owing to the singularities of the Panamanian terrain, maps are sometimes deceptive. As a prominent "jungle hound" once said, "We don't have the G. I. hills down here. The issue contours won't fit 'em." On terrain which is geologically old, one can, while standing on one side of a hill, state with remarkable accuracy what may be found on the other side. But in a volcanic country that is comparatively new, and where erosion has made but little impression due to the profusion of flood absorbing plants and the nature of the soil, such prophecy is folly. Hills, ridges, and hummocks rise where logically no elevations should be, while streams and gullies wander about them with an apparent disregard of all law except that of gravity.

When one is moving over this corrugated, knobbed, and densely wooded terrain through a winding tunnel of vegetation, miles cease to exist as such and become X, or the unknown quantity. What does it profit a man to measure off 3 map-miles to his destination and prophesy that it will be reached in one hour and thirty-five minutes, if four ravines and five ridges lie between, the trail requires cutting for 1½ miles, and the party, after losing and finding the trail twice, reaches the selected point after two hours and forty minutes of gruelling work? The answer is that miles are disregarded in trail work. Time only remains a factor.

Last, the trails as mapped are only roughly accurate. When first mapped they were, of course, as accurately plotted as the width of the draftsman's pen would permit. However, Panama is inhabited by a people who firmly believe in economy of effort. Since it is much easier to cut around an obstacle than to remove it, the former method is usually followed. A tree falls over the trail, wild pineapples thrust out their poisonous swords, monkey grass droops over the way, and a minor change is made in the trail. A landslip occurs during the torrential rains of the wet season, and the map reader is vastly puzzled how to find the route as shown on the map. The trail has moved some quarter of a mile in either direction. Some native with unusual

ambition cuts a *troche* as a short cut. The traffic follows, and the old trail is abandoned. The fallen tree bridge washes out, and the next traveler cuts upstream to a ford.

However, the greatest difficulty in trail work is not to be found in the virgin jungle, but in the vicinity of settlements. The trails which are of military value are often little used by natives, while, on the other hand, native trails which lead to banana cuttings, charcoal pits, or cayuca landings are usually of no interest to the reconnaissance party. Moreover, the number of constantly changing trails in the vast banana farms leave the party in great doubt as to which path will lead out of the maze. It is not unusual for a party to spend two or three hours lost in one of the larger plantations.

It may be seen that, under the above conditions, the best of maps are of little aid except for general use in locating the main ridges and streamlines. What, then, may we substitute for maps?

The answer that the Infantry of the Canal Zone has worked out is the trail report. During the dry season of each year small reconnaissance parties are sent out to cover the main trails in those areas with which the Army is most concerned. These parties work through to their final destinations, blazing or opening the trail where necessary. On their return, they take the notes on landmarks and time, which form the trail report.

Let us assume, for example, that an officer and five men are sent out with the mission of making a report for the first time on Trail 703, from Grilo, working out the trail as they go, cutting where it has grown up, following native detours around obstacles, spending one-third of their time lost, but finally arriving at their destination, Guevara. When on the return trip over the now familiar trail, the leader appoints two men to record notes and read azimuths. On the march, when passing a landmark, the leader calls out the time, then the note to be made. The man with the compass calls out the azimuth of the trail at this point to the nearest 10 degrees. These notes are written, on the march, by the recorder.

Only marching time is considered. That is, when a halt is made the time is noted. Then when the march is resumed, the watch is set at the halting time. The trail report then takes shape as follows:

TRAIL 703: GUEVARA—GRILO

March time Wet Dry	*Notes*	*Azimuths*
7:03	Leave cantina Guevara, take main trail toward palm grove south end of village clearing	170
7:05	Through palms	160
7:06	Lone nipa hut, right. Trail, right, well used. Keep faint trail	160
7:08	Sugar cane	150
7:10	New trail, well used, right	140
7:15	Stream, 5x8, flow right, 2-log bridge. Enter cane brake	120
7:19	Up nose. Cane ends. Light jungle	100
7:23	Ridge, old rubber trail, unused	130
2:12	3' tree, girdled 4' from base. Follow down stream bed	30
2:27	5' buttress tree, well blazed, right. Take trail on south bank	110
2:33	Ant hill, 30' diameter, left	120
2:38	Over left shoulder of hill	130
2:41	Dry stream, 3x6. Up left shoulder of hill. Limestone and boulders	120
2:44	Down nose. Gradual slope	90
2:46	4' windfall, left	40
2:51	Light jungle, ferns	60
2:56	New clearing, 10 acres	110
2:57	Charcoal pit, left. Trail now well beaten	140
3:02	Banana plantation, many trails, follow general azimuth	130
3:19	Pick up trail at three large buttress trees. Cane brake	180
3:21	Stream, 6x15, flow right, cayuca landing. Cross on 3-log bridge	200
3:23	Church, Grilo.	

On reaching the church in Grilo, the work of the reconnaissance party as such is ended, but that of the reporting officer is only well begun. The report must be reversed, that is, read Grilo–Guevara, the time and azimuth must

be changed accordingly, and the whole made readable. This change is necessary since the route travelled by a military party for the first time would be Grilo–Guevara rather than the reverse. The finished report would then be something as follows:

TRAIL 703: GRILO—GUEVARA

March time Wet	Dry	*Notes*	*Azimuths*
	12:00	Church at Grilo, trail to cayuca landing	20
	12:02	Stream, 6x15, flow left. Cayuca landing. Cross on 3-log bridge. Enter cane brake	0
	12:04	Three large buttress trees. Banana plantation. Many trails. Follow general azimuth	310
	12:21	New clearing, 10 acres. Trail well beaten	320
	12:26	Charcoal pit, right. Trail becomes dim	290
	12:27	Light jungle. Fern trees	240
	12:32	4' windfall, right	220
	9:04	Down nose. Jungle ends. Cane brake	300
	9:08	Stream, 5x8, flow left. 2-log bridge. Sugar cane	320
	9:13	New trail, well used, left	330
	9:15	Cane ends. Palm grove	340
	9:17	Lone nipa hut, left. Trail right	340
	9:18	Across clearing	350
	9:20	Cantina, Guevara.	

As it now stands the report is deceptive. One reading it would say, "Nine hours and twenty minutes marching time. About eleven hours, counting rests. A one-day march if pressed." This would be entirely wrong. A twenty-hour march may take three, four, or five days, depending on season, rainfall, size of party, terrain, and type of trail. Hence a general description of the trip, approximating a diary, is appended, giving the above conditions as well as any other general data which may be of interest to a future party.

This report is now mimeographed in such quantity as may be necessary, and a copy is furnished each party which may use the trail during the dry season. The leader of such a party, by the use of watch, compass, and report, may then proceed directly to Guevara without delay.

The use of the report by following parties is as follows:

The leader sets his watch at 12:00 on leaving Grilo, regardless of the actual hour. He appoints a man to watch compass bearings. With the rate of march of the average party under pack, he may then expect by marching on a general azimuth of 20 degrees to cross the bridge at the cayuca landing at 12:02, trail time. In like manner, at 12:21 he should emerge from the banana plantation, in the vicinity of a charcoal pit in the middle of a recent clearing.

So, by simply reading this report and checking off the landmarks as he passes them, he cannot go wrong for more than ten minutes at the most. When a halt is made the time is noted, and when the march is resumed the watch is set back to the halting time, precisely as when the report is made.

Any party which follows a trail by the use of a trail report is expected to make corrections in time, landmarks, and azimuths when the recorded notes have become out of date. For example, if a nipa hut noted has been burned, the report may be changed to read, "Ruins," or the item may be deleted entirely. If a party finds that it requires nineteen minutes between landmarks instead of thirteen, it should so correct the report. If a landslip changes the direction of the trail, the azimuths should correspondingly change. This constant revision keeps the trail report approximately abreast of the equally constant trail changes.

It will be noted that the marching time column under "Wet" is left vacant. It is necessary to consider both the "Dry" and "Wet" seasons under marching time, since there is great variance between the rates of march

possible, conditions other than rainfall being equal. Therefore a party which is familiar with the route is sent out to march over the trail in the wet season. This party enters in the "Wet" column the time made under "Wet" conditions, thus making the trail report accurate for all-year use. Constant revision by all parties that use the trail keeps the report accurate at all times.

A secondary use of the trail report is to give the map location of an unmapped trail. The average rate of march per minute is calculated and a minute scale is laid off on a ruler, according to the scale of the map to be used. By use of the time column, the azimuth column, the ruler, and a protractor, a fairly accurate traverse can be made.

The errors of the approximate azimuths are compensating, but those of distance are cumulative and must be corrected.

The traverse is adjusted by shortening or lengthening parallel lines until two mapped points, usually the starting point and destination, coincide with the same points on the traverse. Then the report is read and compared to the mapped ridges and streamlines, minor adjustments are made, and the trail finally traced on the map.

While this method of sailing and plotting the course by dead reckoning is one of the crudest forms of mapping, it is surprisingly accurate. In the absence of a bona fide map of the trail, it serves to give its general location and directions.

A Revolutionary Badge

From the Notebook of "General Experience"

THE use of a cockade as a military badge is a custom of great antiquity. It was doubtless derived from the crest or plume worn by knights on their helmets. The famous red, white, and blue cockade of the French Revolution is familiar to all readers of history. Of lesser fame, but of more interest to Americans, is the cockade adopted by the Continental Army in the Revolution.

In 1780 General Washington directed that all continental troops should wear a black and white cockade as a sign of the friendship between America and France. The white represented France, this being the Bourbon color, but the reason for selecting black to represent America is not clear.

In view of the prior use of the black and white cockade by the American Army, this device would be an appropriate award to all regiments that hold Revolutionary War battle honors.

Armored Car Design[1]

MAJOR C. C. BENSON, Cavalry

THE business of designing fighting machines for ground troops has received far more attention from automotive engineers than from those who use the machines. Unfortunately, the engineers are not fully conversant with the needs of the troops, and are prone to over-emphasize mechanical features. As a result, we find machines that are mechanically correct, in which the driver cannot see and the gunner cannot shoot. Mechanical perfection is of little use if the completed machine lacks fighting ability; hence, there is need in the design of fighting machines to shift the emphasis from mechanical to tactical features. To illustrate the application of this idea to a specific problem, the author presents herewith his views on the design of a heavy armored car.

FUNDAMENTALS OF DESIGN

The heavy armored car will be used by all arms for important reconnaissance work. In addition, it will be extensively employed to attack ground troops and to give protection against aircraft and against armored vehicles. It must provide mobility, firepower, and protection for the crew. If it can have crushing power as well, so much the better, as it will have frequent need to overcome obstacles that would otherwise block its operations. To be sufficiently mobile, the machine must be capable of sustained high speed on the road and across country. Cross-country ability is especially important, because the machine will be of comparatively little use if confined to the roads. Fire power implies weapons for use against ground troops, aircraft, armored cars, and tanks. Protection for the crew, in so far as protection is possible, requires speed, armor, and suitably protected eye slits. Armor of sufficient thickness to withstand even the fire of .50-caliber machine guns will weigh more than an agile machine can carry; hence, speed enough to avoid or escape hostile fire will be of great importance. A vehicle that embodies these characteristics will necessarily be a non-commercial product—a special machine in the same sense that attack and pursuit planes are special. No commercial machine now being built can meet the demands that will be made on a heavy armored car.

There are four main factors to consider: running gear, power plant, driver and gunners. For the present, we shall consider only the arrangement of these elements with respect to each other. As the running gear must rest upon the ground, its position will give no trouble. The members of the crew should be together, either forward or aft of the engine compartment, because they must cooperate continuously. If the engine is forward, as in some of the pioneer tanks, it may obstruct the driver's view; furthermore, its heat and fumes will nauseate the crew. The engine can do its work efficiently whether forward or aft; consequently, it should be aft, where it will not interfere with the operation of the vehicle. The central

[1] By special arrangement with the editors, this article appears in the April issues of publications other than the INFANTRY JOURNAL.

and forward positions remain available for the driver and gunners. For cross-country movements, the driver should be where he can observe closely each obstacle that is in his path; hence, the logical place for him is in the bow. This position subjects the driver to severe jolts, because the pitch of the bow is greater than amidships; but he can brace himself against expected shocks far better than can a gunner who is intent upon handling his weapons. A gunner needs the steadiest gun platform that the machine affords; therefore he should be amidships, where the jolts and vibrations are reduced to the minimum. The most desirable arrangement of the four main elements may be represented graphically as shown in Fig. 1. Accustomed as we are to the conventional arrangement of units in pleasure vehicles, this arrangement may look queer. However, pleasure and warfare differ; we are less concerned with the appearance of an armored car than with its efficiency as a fighting machine.

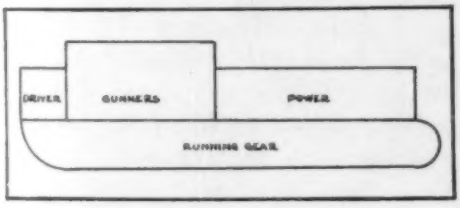


FIGURE 1

With these ideas on the arrangement of the main elements, we may proceed with other features of the design. Automotive engineers will have to produce the running gear and power plant; the using service must design the hull, with suitable facilities for the crew. Part of the problem is tactical and part is technical, but responsibility for results rests upon the using service. To secure results, the using service must state definitely what it wants.

RUNNING GEAR

Various forms of running gear have been tried. They include four wheels, six wheels, eight wheels, caterpillar tracks in rear and wheels in front, full caterpillar tracks, and a combination of wheels for the road with tracks for cross-country work. Driving power is usually applied to two, four, or six wheels; or to the caterpillar tracks through rear driving sprockets. The wheeled vehicles, when equipped with over-sized balloon tires, have shown far better cross-country ability than the average commercial car, and their sustained speed on the road leaves nothing to be desired. However, even those with six-wheel drive bog down in soft ground, have insufficient traction for climbing steep slopes, and cannot surmount obstacles. Unless equipped with complicated dual controls for steering backwards or forwards, they require considerable room for turning. Caterpillar tracks in rear are better than wheels all around for cross-country travel, but not so good for speed on the road. The full caterpillar tracks give excellent service across country and enable the driver to turn his machine around in about half its own length; but the caterpillar machine cannot compete with wheeled vehicles on the road. The combination of wheels for the road and full caterpillar tracks for rough going is the most desirable that has as yet been produced. If the change from wheels to tracks, and reverse, can be made readily, this combination will meet all military needs.

For fast moving vehicles, springs and

shock absorbers are essential. Even at slow speeds, vibrations and road shocks quickly wear out machinery that is rigidly supported by an unsprung frame, because every blow is transmitted directly to the working parts. In our rigidly constructed Mark VIII tank, vibration is so great that engine bolts must be tightened after each three hours of running time. Imagine what would happen if, instead of 6 miles an hour, this machine could attain 60! A heavy armored car will encounter good roads, poor roads, and extremely rough going where there are no roads at all; and it must rely greatly upon speed to avoid destructive fire from the enemy's weapons. In a fast fighting machine, the stability of the gunner's firing platform is another important consideration which depends largely upon the elimination of vibration and jolts. Rigid construction entails inaccurate fire except at very low speeds, and even at a snail's pace it is difficult for a gunner to keep his sights on the target. These considerations indicate the need for the best combination of springs and shock absorbers that can be devised.

Heavy armored cars must travel under their own power; they cannot be carried on trucks, as light tanks have been in the past. It will therefore be necessary to depart from the types of running gear that have been devised for tanks. The desired type should provide wheels for road travel, and full caterpillar tracks for cross-country work. The tracks must be of high-grade metal to combine light weight with strength and long life, and suitable devices must be provided for changing readily from wheels to tracks or reverse. The shape of the bearing surface of the track when adjusted for operation

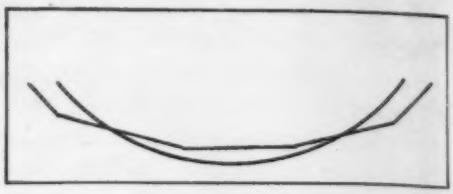


FIGURE 2

should approximate the arc of a great circle, thus to enable the machine to surmount obstacles and to facilitate turning. Individually sprung wheels and double-action shock absorbers should suffice to eliminate most of the vibrations and jolts. These items cover the principal features of the running gear that is needed for a heavy armored car.

POWER PLANT

Lack of reserve power is a serious fault in any military vehicle. In commercial use, vehicles usually operate singly rather than in groups; each driver can take full advantage of conditions which favor his progress, and can avoid placing undue strain on his motor. In the military service, group operation and control is necessarily the rule. Even on good roads, drivers must often halt on steep grades and yet be prepared to maintain their proper places when the column moves on. While the column is moving, some machines will be going down hill while others are struggling up. Excessive extension of the unit or considerable reduction in speed will result unless each machine has enough reserve power to meet unusual demands. In addition, military vehicles frequently have to operate on roads that commercial machines would avoid, and in areas where there are no roads whatever. In combat, an underpowered machine forces the driver to shift gears for minor obstacles, and thus increases greatly the

time allowed for hostile gunners to register a destructive hit. The fighting machine must have plenty of reserve power to enable it to survive.

The maintenance and repair work on military vehicles must often be done in the open. Wind, sand, rain, mud, snow, sleet, and cold impose far different conditions than are usually found in the steam-heated commercial garage. And when conditions are worst, tactical demands are often most pressing. The men available to do the necessary work will not be expert mechanics. There is, therefore, an especial need in the military service for an engine that is rugged in construction and simple in design.

Invention and development are advancing so rapidly in the automotive industry that the sensation of today may be a back number tomorrow. Diesel engines, steam engines, and gasoline engines—some air-cooled and some water-cooled—present a bewildering array. Among the many excellent motors that our manufacturers produce, only those built for aircraft or for marine use have sufficient power to operate a heavy armored car. The aircraft motors will run efficiently whether top-side up or not, a very desirable feature, but none of them are designed to withstand the shocks of rough going across country. The marine motors are simpler and more rugged, but their water jackets require an unlimited supply of cool water to keep the engine at an efficient operating temperature. An armored car must carry its own water supply, and cargo space is extremely limited. An air-cooled motor of the type used in the Vickers medium tank (British) would afford distinct advantages, especially in freezing weather, but there are no high-powered American engines of this type except in airplanes. Obviously, the purpose for which a motor is intended governs its design. We are forced to conclude that the right motor for a heavy armored car has not yet been built.

Rather than wait until a proper motor is designed and put into production, we may proceed with an admittedly inferior substitute. Capable automotive engineers can produce the new engine long before the Army is ready to use it. Their problem is merely to add one more engine to the hundreds they have already designed; ours is to learn how to use this new weapon tactically, and how to defend ourselves against it. It is time for us to start on our share of the business with such means as are at hand. The Army has in storage some thousands of Liberty motors which can make shift to meet our needs temporarily. They have power (338 B.H.P. at 1,400 r.p.m.), and are compact; at comparatively slight expense many of their original faults can be eliminated by rebuilding. Experiments with air-cooled Liberties, already started by the Air Corps, would provide designers with valuable data. The use of the Liberty motor, air-cooled or "as is," would involve excessive maintenance and repair work, but at least we would have something to use at once for tactical instruction.

For the benefit of those who are qualified to design an engine for use in our heavy armored cars, we may briefly summarize our needs as follows: simplicity, power (about 350 B.H.P. at 1,500 r.p.m.), dependability, compactness, rugged construction, accessibility, and again simplicity.

THE HULL

Having thus disposed of the parts that will concern automotive engineers,

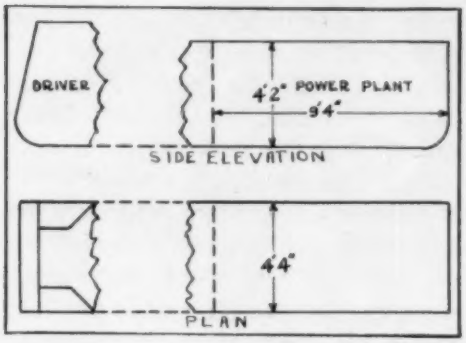


FIGURE 3

we must now tackle our own share of the design. The first step will be to determine the shape and size of the hull. It must provide excellent observation; all-round fire; low superstructure and low center of gravity; balance; suitable clearance; and room for the power plant, equipment, and crew. These somewhat conflicting requirements will be troublesome, yet there are certain features which can be settled at once. The bottom of the hull will be flat, with bow and stern rounded to avoid scoop shovel action when pulling out of depressions; the driver will be in front, and the engine compartment in rear. Experience gained in the construction of tanks provides enough data for the design of these parts. Resort to the drawing board gives the following results for progress thus far. (See Fig. 3.) It is probable that with a power plant designed for use in a heavy armored car the size of the engine compartment can be reduced, but for the present the requirements of the Liberty motor will govern. Experiments have shown that the space allowed above is sufficient. The space allowed for the driver is purposely made liberal, to accommodate the facilities with which he must be provided. The main point to note is that the design provides the driver with excellent observation to the front and flanks.

The midsection of the hull must accommodate the remainder of the crew. As the driver will have his hands full, there must be at least one gunner to use the weapons. A third man in the crew, to handle signal communications, would double its efficiency; and a fourth would be desirable. If the size of the hull is to keep within reasonable limits, so that the machine will be readily maneuverable, it will be well to draw the line at four men.

To give this crew the maximum combat value, there must be communications equipment and weapons. Extensive experiments will be necessary to determine what should be included in the signal equipment. Radio telephone and telegraph, panels, semaphore flags, pigeons, heliograph, and pyrotechnics will all have to be tested for armored car use. The necessary space for the selected equipment must be provided, for signal equipment in an armored car is just as important as armament. As to weapons, there should be caliber .30 machine guns for use against personnel, a caliber .50 machine gun for antiaircraft fire, and a 3-pounder cannon to deal with hostile armored cars and tanks.

Much might be written about other items of equipment and detailed facilities that should be provided for the driver and for other members of the crew. Some of the items that need attention are ammunition racks, an instrument board with luminous dials, compass, periscopes, gas masks, tools, spare parts, responsive controls, interior lights, head lights, tail light, flashlights, towing cables and brackets, individual lockers, fire extinguishers, fire proof

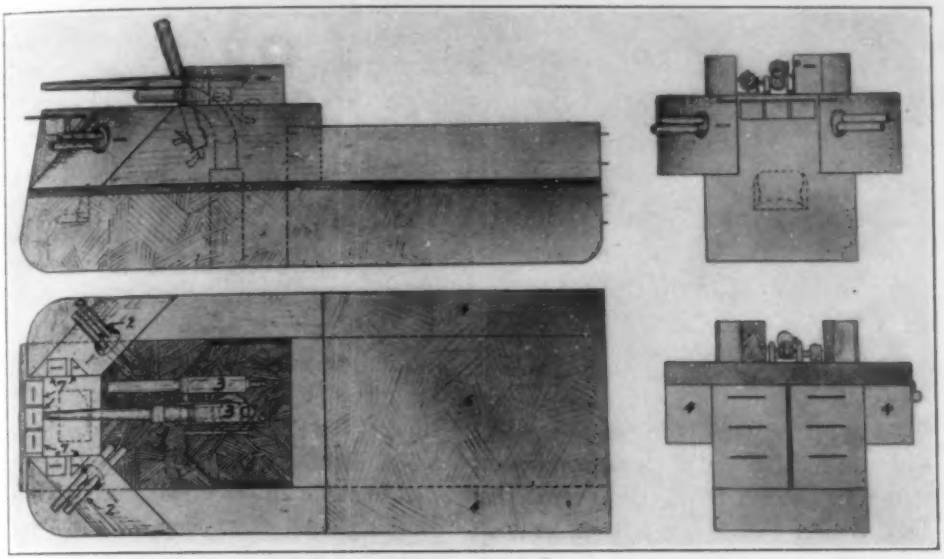


FIGURE 4

bulkhead for engine compartment, camouflage materials, splash guards, demolition equipment, photographic equipment, food and water containers. These and related matters are properly the subject for thorough investigations, which should be made with full sized wooden models before the first steel hull is built. Until these investigations have been made, we cannot draw up a complete design. It is possible, however, to prepare a lay-out that will accommodate at least the major items. Without more ado, we submit for the hull the design shown in Fig. 4.

The following numbers refer to corresponding numbers on the sketches.

1. Fighting compartment (heavy line), extends out over running gear, normally open at the top, roof in suitable sections carried on top of engine compartment. Permanent roof over driver's seat. Front plates slope forward at an angle of 45°. Entrance and exit over the top.

2. Caliber .30 machine guns, air-cooled, two in each mount. Horizontal traverse about 130°. Mounts placed to allow each gunner as much room as possible. Primarily for fire to the front and flanks against personnel; can also furnish some antiaircraft fire.

3. Three-pounder cannon on pedestal mount, semi-automatic, high velocity, all-round traverse. Small shield on gun to protect gunner from machine gun fire. Caliber .50 machine gun, air-cooled, for antiaircraft fire, on same mount, to right or left of cannon.

4. Armored gasoline tanks, extend out over running gear, capacity 100 gallons each. Beneath the armor are inner tanks, self-sealing if punctured.

5. Water-tight hinged doors which give access to power plant. There are similar doors in the fireproof bulkhead which separates the fighting compartment from the engine room. Door handles serve also as steps of ladder to roof. Tool racks on inner surface of each door.

6. Flat roof of engine compartment provides a place for carrying caterpillar tracks when the machine is operating on wheels.

7. Observation ports, backed with thick shatter-proof glass, and protected outside by steel doors with suitable eye slits or holes for use when under fire.

ASSEMBLY

There remains the important matter of fitting the running gear to this hull. As previously mentioned, the combination of wheels for the road with full

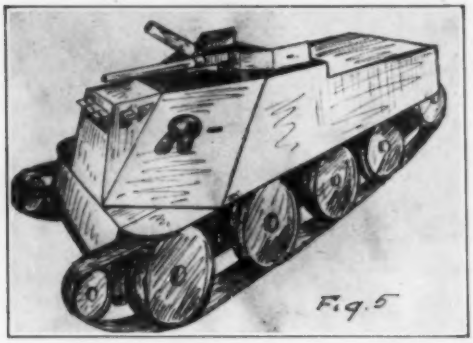


FIGURE 5

caterpillar tracks for cross-country work is most desirable for our purpose. Running gear of this type, invented by Mr. Walter Christie, is now undergoing tests on a new experimental machine. The performance of this gear to date has been fully satisfactory, but whether it will stand up under the full load of the completed machine remains to be seen. The total weight of the machine, fully equipped and armored against .30-caliber bullets, will be about 12 tons. To travel at 60 miles an hour on the road and about 30 across country, this machine must have running gear of exceptional quality. The tracks particularly will have to be strong enough to withstand terrific strains, and yet light enough to permit easy removal and handling. The sketch (Fig. 5) shows running gear of the Christie type combined with the hull described above. Note that the caterpillar tracks extend beyond the hull, so that neither bow nor stern can dig into an obstacle or steep bank.

In producing a new model automobile, manufacturers consult not only their designers but also the production, service, and sales departments. A similar system might well be applied to new fighting machines for the Army, but unfortunately we have no arm or service which combines these viewpoints under the control of one responsible head. Lacking such an agency, we must rely upon the cooperation of interested officers throughout the Army to point out mistakes and suggest improvements. Costly mistakes and needless delays will occur in building heavy armored cars unless we develop sound ideas on the fundamentals of design. In addition, there must be careful consideration of matters that affect production and service. The ultimate consumer—the using service—should get what it needs for tactical use in combat. If the using service neglects its share of the problem, it must be satisfied with what others produce.

A GROUP OF LIGHT TANKS AND CARGO CARRIERS

Retrospect

A condensed review for the busy reader[1]

MAJOR FRANK B. JORDAN, Field Artillery

CHANCELLORSVILLE

AFTER the battle of Fredericksburg both sides relapsed into comparative inactivity. General Burnside lacked the confidence of his corps commanders, who even went so far as to memorialize the President on the subject, recommending a change to the line of the James. General Halleck, however, advised Burnside to renew his attempt, and was backed in this suggestion by President Lincoln. So on January 20, 1863, Burnside tried to turn Lee's left via Banks Ford. A heavy rain turned the roads into liquid mud; the pontoons for the crossing could not get up; Lee got wind of the move, and ordered Pickett's division to Salem Church; and the crestfallen Burnside returned to his lines opposite Fredericksburg. The movement was dubbed by all who took part in it, the "Mud March."

Burnside now proposed a housecleaning, and on January 23 submitted a draft of an order to the President for approval and issue. This order was to dismiss several high-ranking officers of the Army of the Potomac, among them Hooker, Franklin, and Sumner The reply of the President was to relieve Burnside, Franklin, and Sumner from duty with the Army of the Potomac, and to place Hooker in command. The latter at once set about reorganizing the army, and discontinued the "grand divisions" in favor of the corps organization. Reconnaissance of the fords of the Rappahannock from U. S. Ford to Skinker's Neck was initiated, with a view to an immediate offensive. About this time the IX Corps was ordered transferred to Fort Monroe, and news of this movement caused Lee to move the divisions of Pickett and Hood in

OPPOSING FORCES

Army of the Potomac (Maj. Gen. Joseph Hooker)		*Army of Northern Virginia* (Gen. Robert E. Lee)	
I Corps (Reynolds)	19,600	*I Corps* (Longstreet absent)	
1st Div. (Wadsworth)		McLaws' Div.	10,100
1st Brig. (Phelps)		Wofford's Brig.	
2d Brig. (Cutler)		Semmes' Brig.	
3d Brig. (Paul)		Kershaw's Brig.	
4th Brig. (Meredith)		Barksdale's Brig.	
2d Div. (Robinson)		Anderson's Div.	10,000
1st Brig. (Root)		Wilcox's Brig.	
2d Brig. (Baxter)		Wright's Brig.	
3d Brig. (Leonard)		Mahone's Brig.	
3d Div. (Doubleday)		Posey's Brig.	
1st Brig. (Rowley)		Perry's Brig.	
2d Brig. (Stone)		Corps Arty.	1,000
II Corps (Couch)		Alexander's Bn.	
1st Div. (Hancock)		Washington Arty.	
1st Brig. (Caldwell)		*II Corps* (Jackson)	
2d Brig. (Meagher)		A. P. Hill's Div.	13,700
3d Brig. (Zook)		Heth's Brig.	
4th Brig. (Brooke)		Thomas' Brig.	

[1] The reader is referred to the Introduction to the first article of the series, page 238, INFANTRY JOURNAL for September, 1928.

2d Div. (Gibbon)
1st Brig. (Sully)
2d Brig. (Owen)
3d Brig. (Hall)
3d Div. (French)
1st Brig. (Carroll)
2d Brig. (Hays)
3d Brig. (MacGregor)
Corps Arty. (2 btries.)

III Corps (Sickles)..... 20,800
1st Div. (Birney)
1st Brig. (Graham)
2d Brig. (Ward)
3d Brig. (Hayman)
2d Div. (Berry)
1st Brig. (Carr)
2d Brig. (Revere)
3d Brig. (Mott)
3d Div. (Whipple)
1st Brig. (Franklin)
2d Brig. (Bowman)
3d Brig. (Berdan)

V Corps (Meade)..... 18,300
1st Div. (Griffin)
1st Brig. (Barnes)
2d Brig. (McQuade)
3d Brig. (Stockton)
2d Div. (Sykes)
1st Brig. (Ayres)
2d Brig. (Burbank)
3d Brig. (O'Rorke)
3d Div. (Humphreys)
1st Brig. (Tyler)
2d Brig. (Allabach)

VI Corps (Sedgwick)..... 26,500
1st Div. (Brooks)
1st Brig. (Brown)
2d Brig. (Bartlett)
3d Brig. (Russell)
2d Div. (Howe)
2d Brig. (Grant)
3d Brig. (Neill)
3d Div. (Newton)
1st Brig. (Shaler)
2d Brig. (Browne)
3d Brig. (Wheaton)
Light Div. (Burnham)
(5 regts.)

XI Corps (Howard)..... 15,400
1st Div. (Devens)
1st Brig. (Von Gilsa)
2d Brig. (McLean)
2d Div. (Von Steinwehr)
1st Brig. (Buschbeck)
2d Brig. (Barlow)
3d Div. (Schurz)
1st Brig. (Schimmelfennig)
2d Brig. (Krzyzanowski)
Corps Arty. (3 btries.)

XII Corps (Slocum)..... 14,900
1st Div. (Williams)
1st Brig. (Knipe)
2d Brig. (Ross)
3d Brig. (Ruger)
2d Div. (Geary)
1st Brig. (Candy)
2d Brig. (Kane)
3d Brig. (Greene)

1st *Cav. Div.* (Pleasonton)
2d Brig. (Devin) 2,800

Art. Res. (Hunt)..... 1,800
(11 btries.)

General Headquarters..... 4,400
(P.M.G., Engrs., Sig., etc.)

Total 143,600
Guns 388

Lane's Brig.
McGowan's Brig.
Archer's Brig.
Pender's Brig.

D. H. Hill's Div..... 11,400
Rodes' Brig.
Colquitt's Brig.
Ramseur's Brig.
Doles' Brig.
Iverson's Brig.

Early's Div..... 9,900
Gordon's Brig.
Hoke's Brig.
Smith's Brig.
Hays' Brig.

Trimble's Div. (Colston)..... 8,100
1st Brig. (Paxton)
2d Brig. (Jones)
3d Brig. (Colston)
4th Brig. (Nicholls)

Corps Arty..... 1,000
Brown's Bn.
McIntosh's Bn.

Art. Res. (Pendleton)..... 1,900
Sumter Bn.
Nelson's Bn.

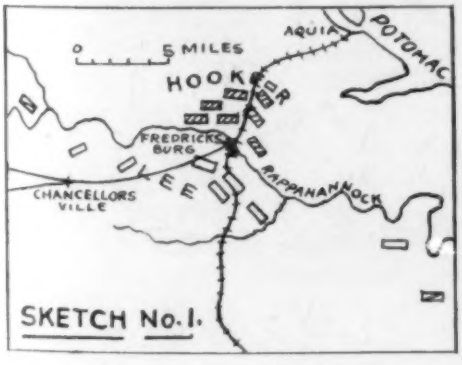
Cav. Div. (Stuart)
2d Brig. (F. Lee)..... 2,000

Total 60,100
Guns 170*

*Estimated.

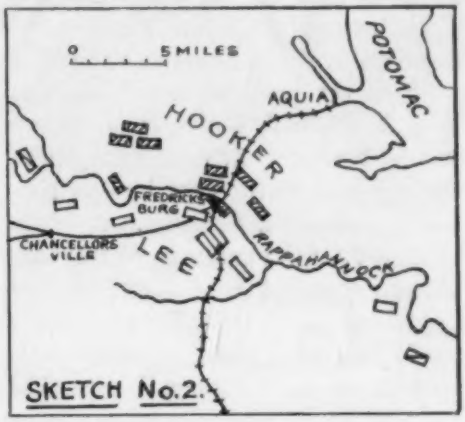
that direction, and to send Longstreet to take command in the threatened quarter.

Early in March, Hooker renewed his reconnaissance of the fords, and rumors reached Lee of a new attempt to turn his left via U. S. Ford. Later in the month Halleck invited Hooker's attention to the scattered condition of Lee's forces, and suggested a blow "as soon as practicable"; he also predicted approaching conflicts in other theaters that would probably distract Lee's attention from Hooker. During April, Lee continued watching the fords of the Rappahannock and the Rapidan, and Hooker laid his plan of campaign before the President. This plan was: to throw the bulk of the cavalry against Lee's communications with Richmond; to threaten the passage of the river in the vicinity of Fredericksburg, while actually moving to turn Lee's left via the fords above the town; all of which was to cause Lee to withdraw toward Richmond. When the President had approved, preparations for the proposed movement were pushed, in spite of discouraging weather conditions. Stoneman started on his raid against the Confederate communications on April 25. Though Hooker suspected that Lee was aware of his plans, he determined to proceed nevertheless. Just before operations commenced the opposing forces were disposed generally as shown on Sketch No. 1.



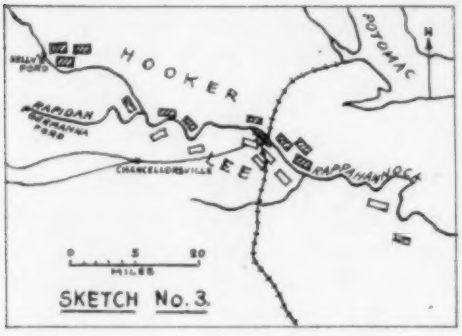
PRELIMINARY OPERATIONS

On April 27, Hooker started the V, XI and XII Corps for Kelly's Ford; they bivouacked that night in the vicinity of Hartwood Church. A brigade of the II Corps was sent to cover U. S. and Banks Fords. The I and III Corps were attached temporarily to the VI Corps for operations in front of Fredericksburg.

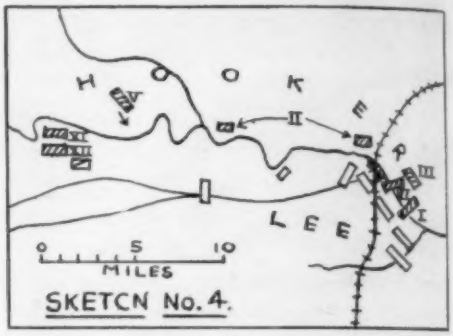


At this time Lee had two brigades of Anderson's division at U. S. Ford and a third at Banks Ford. Fitz Lee's cavalry brigade was picketing the Rappahannock above the Rapidan; the remainder of the Confederate Army was in the vicinity of Fredericksburg. At dark on April 27 the opposing forces were disposed generally as shown on Sketch No. 2.

On April 28, the V, XI and XII Corps (temporarily under Slocum) pushed on to Kelly's Ford and bivouacked nearby at 4:00 p. m. A canvas pontoon bridge was constructed, and the Union troops started crossing, with slight opposition from Confederate cavalry, at 10:00 p.m. Meanwhile the I and VI Corps moved



SKETCH No. 3.

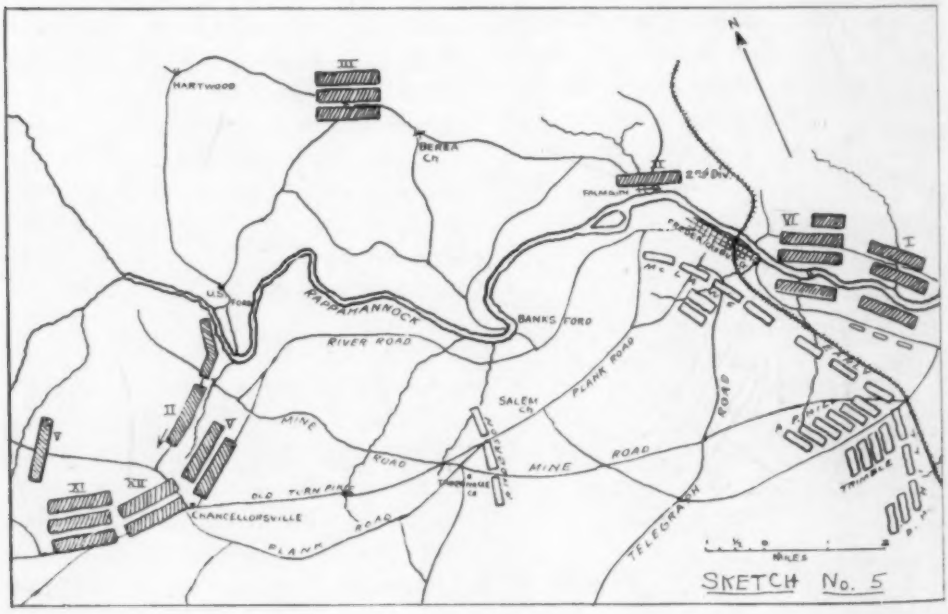


SKETCN No. 4.

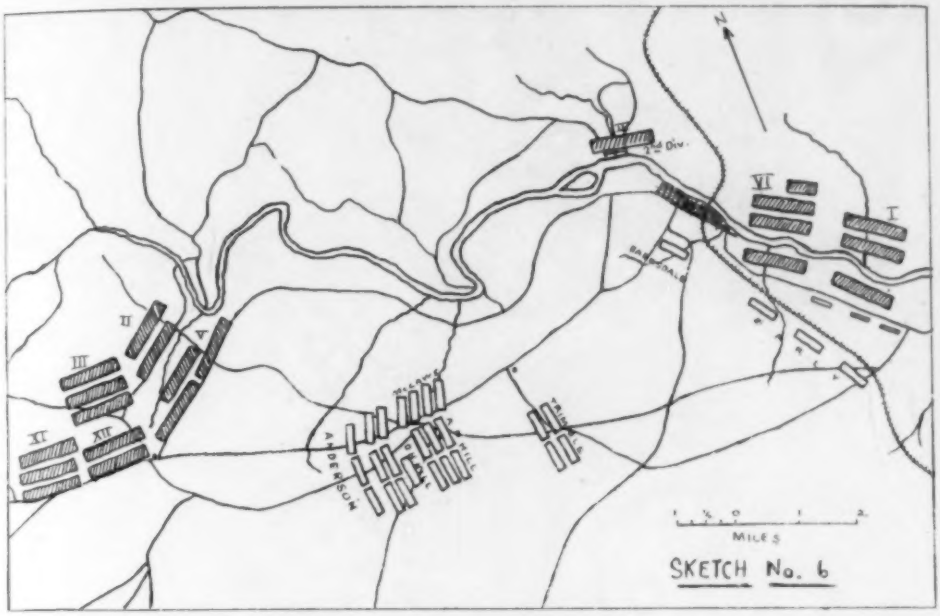
to Franklin's crossing and the mouth of Pollock's Creek to attract the attention of General Lee in that direction. At about dark the III Corps took position between the I and VI; also two divisions of the II Corps were sent to work on the roads around Banks and U. S. Fords, with a view to operations in that vicinity. At dark on April 28 the opposing forces were located generally as shown on Sketch No. 3.

April 29, the remainder of Slocum's forces continued to cross at Kelly's Ford and push on toward the Rapidan, where the XI and XII Corps crossed and went into bivouac at Germanna Bridge. The V Corps followed, but crossed at Ely's Ford at about midnight. At about this time Pleasonton's cavalry reported to Slocum and received the mission of covering the advance on Chancellorsville. The I and VI Corps had forced the Rappahannock with a division each in the vicinity of Fredericksburg (at Pollock's Creek and Franklin's Crossing respectively), and the III Corps had closed up to the river bank between them. The two divisions of the II Corps that had been working on the roads moved on to U. S. Ford.

Stuart had reported the crossing of the previous evening to Lee, and later in the



SKETCH No. 5



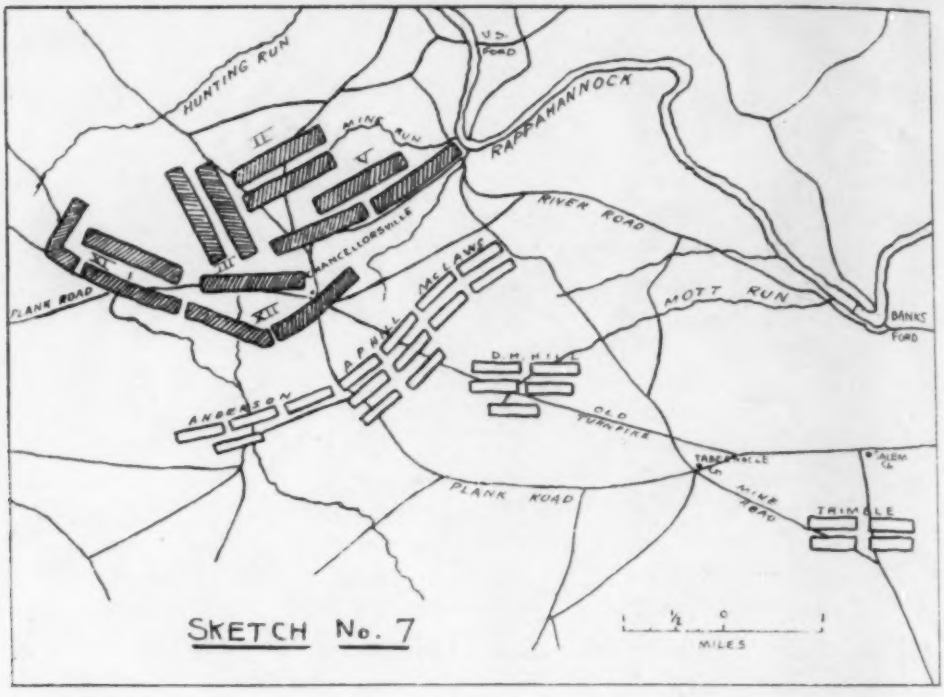
day the movement toward the Rapidan. Lee ordered Anderson to cover the roads leading from Germanna and Ely's Fords, and moved Early and Trimble closer to the lines about Fredericksburg. Apparently he was yet in doubt as to the direction of Hooker's main blow. At dark, April 29, the opposing forces were located generally as shown on Sketch No. 4.

On April 30, the V, XI and XII Corps continued toward Chancellorsville. The II Corps (less 2d Division) crossed at U. S. Ford, and by dark all four corps, under personal command of General Hooker, were assembled in the immediate vicinity of Chancellorsville. The III Corps was ordered to cross at U. S. Ford next day. The I and VI Corps remained near the bridges opposite Fredericksburg; Sedgwick was informed of the concentration near Chancellorsville, and that Hooker expected to be on the heights west of Fredericksburg by dark the following day.

In the face of the above movements, Anderson had retired to the crossing of the Mine and Plank roads and intrenched. The Union cavalry had skirmished with him as he left Chancellorsville, while Stuart, on the other hand, had somewhat delayed the advance of the Union columns from Germanna Ford. As the troops opposite Fredericksburg continued inactive, Lee decided that the main blow was coming against his left flank and rear. Leaving Early's division, reinforced by Barksdale's brigade and part of the reserve artillery, to contain Sedgwick, he moved with the bulk of his force to support Anderson. At dark on April 30 the opposing forces were disposed generally as shown on Sketch No. 5.

THE BATTLE

The III Corps (25 bns.) crossed at U. S. Ford on May 1, and reached Chancellorsville by 9:00 a. m. An advance by all five corps (100 bns.) was ordered for 11:00 a. m. Meanwhile Lee had reinforced Anderson with McLaws'

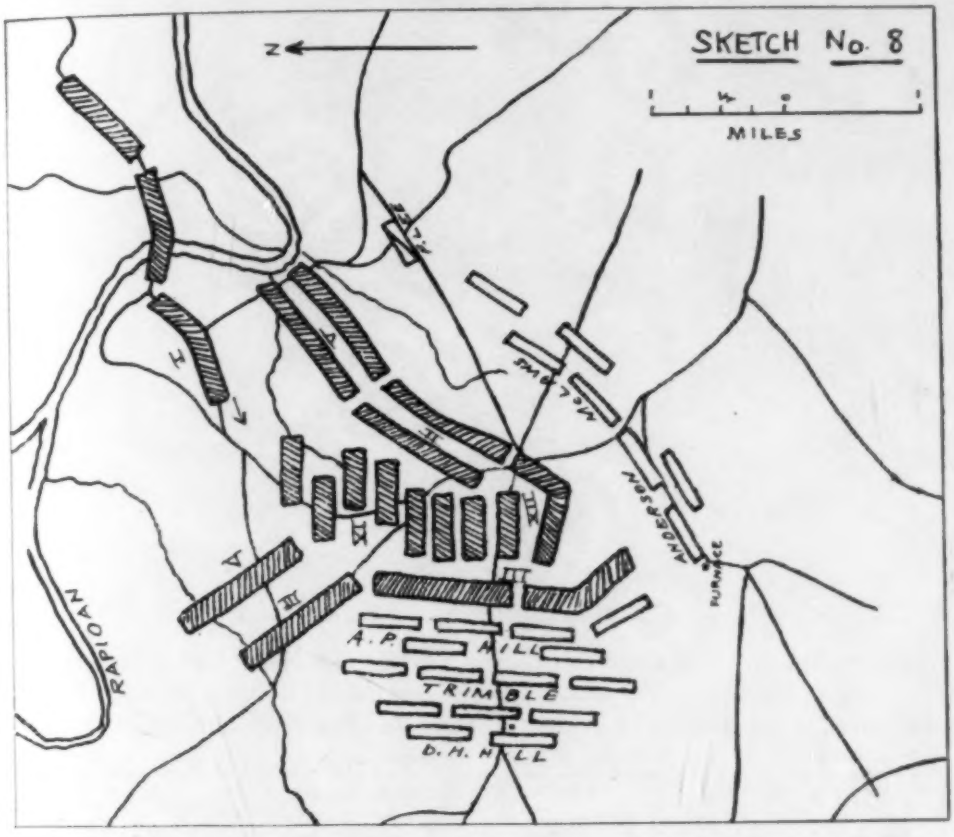


division and Jackson's corps (less Early's division), (a total of 61½ bns. available), and he, too, ordered an advance at 11:00 a. m. At 11:00 a. m. the opposing forces were disposed as shown on Sketch No. 6.

The forces met about a mile east of Chancellorsville, where the brunt of the shock fell upon Sykes' Division (6 bns.) of the V Corps. Anderson (12 bns.) diverged to his left and was turning Sykes' right when Hooker countermanded his orders for an advance, and the Union forces withdrew to their original lines. The I and VI Corps (55 bns.) had been ordered to "demonstrate" in front of Fredericksburg, but the order reached them too late to be carried into effect. At dark on May 1, the opposing forces were disposed generally as shown on Sketch No. 7.

After reviewing the situation, Lee, in consultation with Jackson, decided to operate against the Union right flank, as a frontal attack promised to be too costly. The main blow was assigned to the three divisions (40 bns.) of Jackson's corps, with McLaws and Anderson (21½ bns.) making the holding attack. The brigade of Wilcox (3 bns.) was ordered back to Banks Ford.

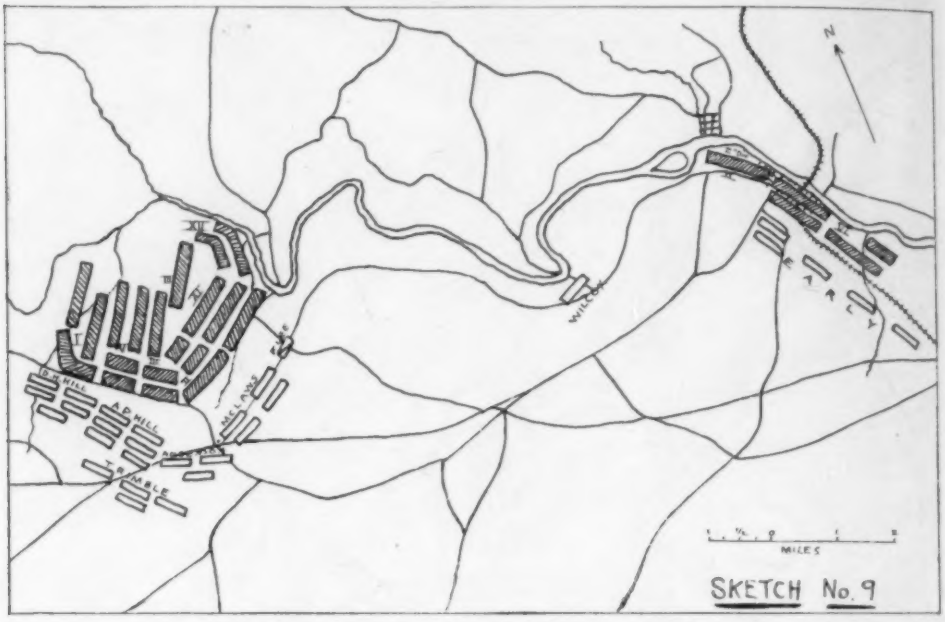
Jackson moved early on May 2 via the Furnace and Brock roads, while McLaws and Anderson tried to pin the Union forces to their lines about Chancellorsville. Jackson's movement was observed near Fairview, and two divisions (20 bns.) of the III Corps were sent to "pursue." Hooker seemed to have the impression that the Confederates were retreating on Richmond. Jackson, after a long, fatiguing march, reached the pike 3 miles west of Chancellorsville, formed line of battle facing due east, and launched his attack at 6:00 p. m. The XI Corps (19 bns.), on the extreme right of Hooker's line, was driven back in considerable confu-



sion, and Jackson pushed on until stopped by the interior lines near Chancellorsville and flanking artillery fire from Fairview. In the course of this attack Jackson was mortally wounded, and further operations were deferred on account of darkness.

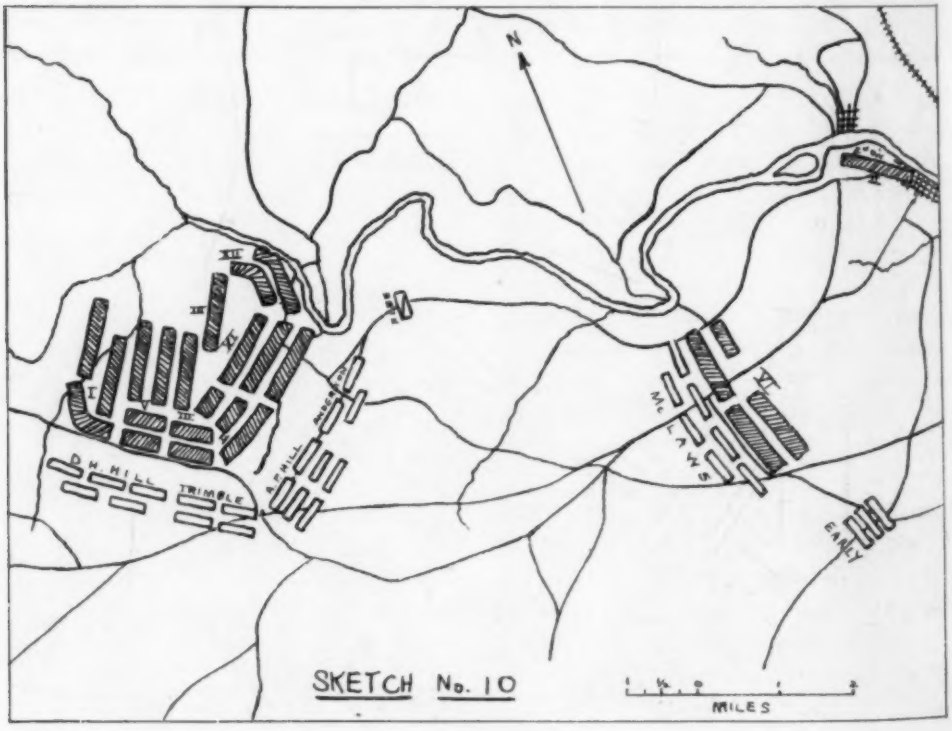
Meanwhile the I Corps (23 bns.) had been ordered up via U. S. Ford and had joined Hooker at Chancellorsville by evening. The VI Corps (32 bns.) was ordered to cross at Fredericksburg and "pursue via Bowling Green road," apparently under a misapprehension as to the real meaning of the Confederate movements. Sedgwick crossed, and by dark had occupied Fredericksburg. At dark on May 2 the opposing forces were disposed generally as shown on Sketch No. 8.

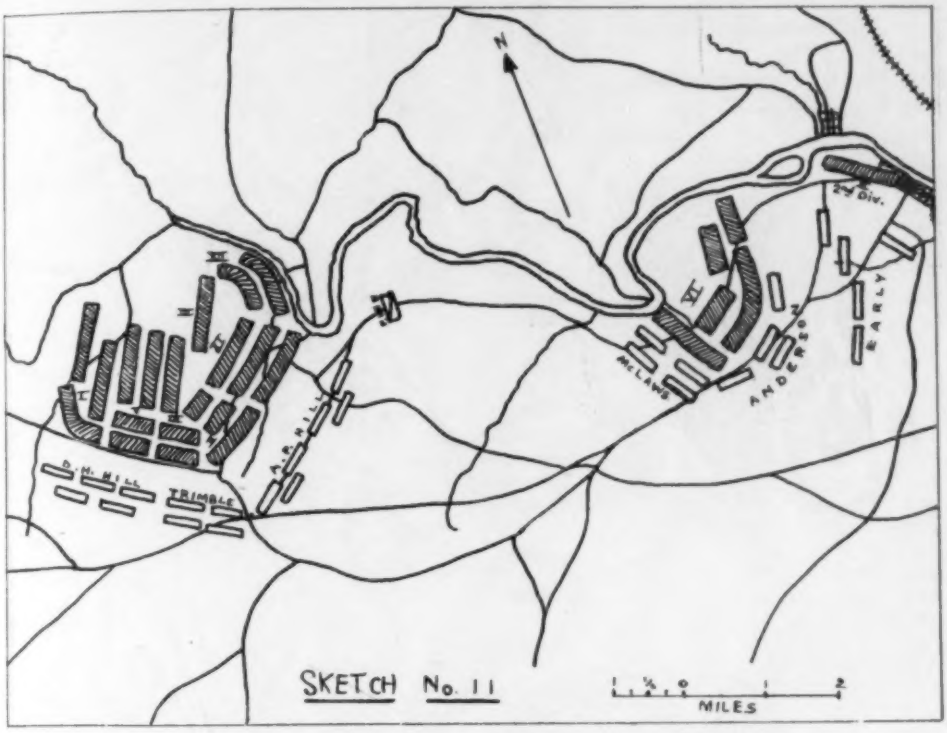
Early on the morning of May 3, the Confederates renewed the attack on Hooker's right. The Union troops had posted large numbers of guns to sweep the ground over which the II Corps (40 bns.), now commanded by Stuart, had to advance. The fighting was hot, but the Union forces were driven back on Chancellorsville. Anderson and McLaws (21½ bns.) attacked in conjunction with the II Corps, and, connecting up before Chancellorsville, by 10:00 a. m. had driven the Union troops toward the Rappahannock. The Confederates immediately reorganized with a view to continuing the attack, and found that Hooker had taken up a strong position nearer the river, covering the crossing at U. S. Ford. At 11:00 a. m. the situation was as shown



on Sketch No. 9, and at about this time Lee's attention was attracted to another part of the field.

While the above action was taking place, the VI Corps (32 bns.) moved out of Fredericksburg and stormed



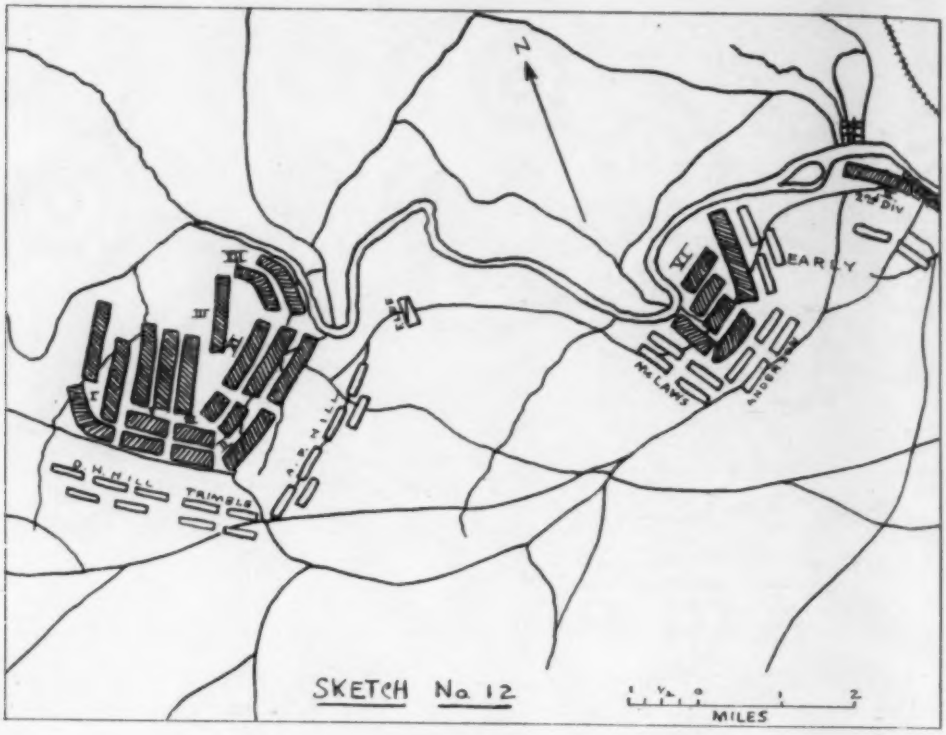


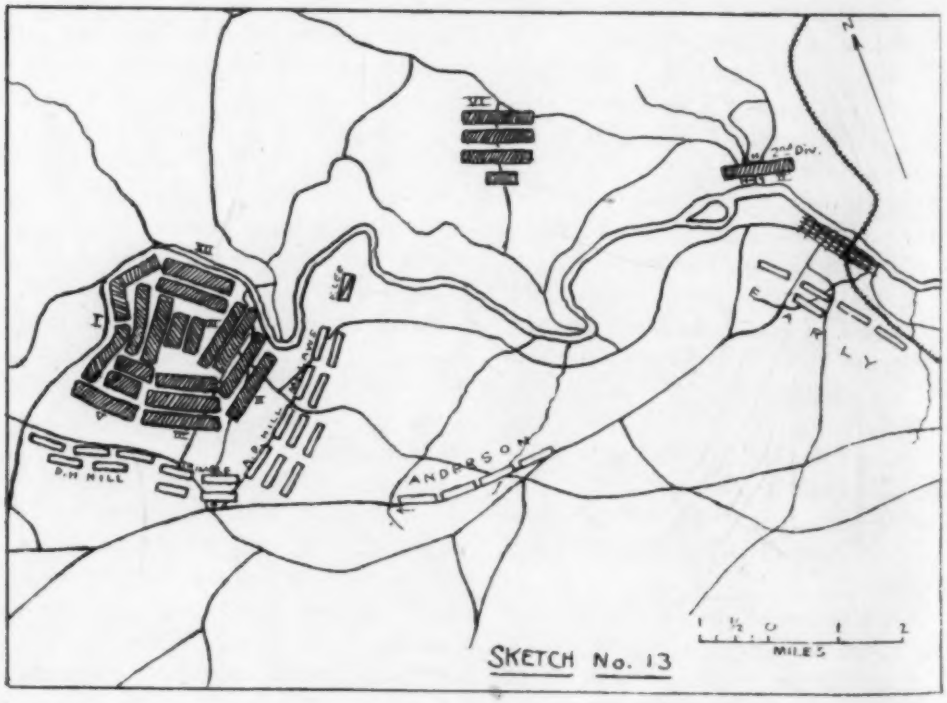
Marye's Hill and the adjoining heights, held at this time by the brigades of Barksdale and Hays (5½ bns.). The two latter withdrew down the Telegraph Road about 2 miles, where they again made a stand and delayed the advance of the VI Corps. Sedgwick advanced on Chancellorsville, meeting with stubborn resistance at Salem Church from troops hurried up by Lee from his western front. Barksdale, Hays, and Wilcox, reinforced by McLaws and part of Anderson's division (22 bns. in all), effectively barred the road to the VI Corps (32 bns.), and darkness found the Confederates holding the high ground around Salem Church. At dark on May 3 the situation was generally as shown on Sketch No. 10.

In the course of the evening Hooker sent word to Sedgwick not to attack next day unless he (Hooker) attacked at the same time. Lee, looking the situation over, decided to contain Hooker (who seemed to have lost all signs of aggressiveness) and to throw the bulk of his force against Sedgwick.

Leaving the three divisions (40 bns.) of the II Corps to keep Hooker busy, Lee concentrated on Sedgwick on May 4. Early (12 bns.) moved back along the Telegraph Road, recaptured Marye's Hill, and soon joined up with McLaws and Anderson (24 bns.), thus putting pressure on the VI Corps from three different directions. At 6:00 p. m. the situation was generally as shown on Sketch No. 11.

Lee pushed his advantage vigorously (he had about 36 bns. against Sedgwick's 32, and had left about 40 to contain the 123 bns. of Hooker), and finally succeeded in driving Sedgwick back on Banks Ford. While this was going on, Hooker remained quiescent


N
EARLY
McLAWS
D.H. HILL
TRIMBLE
SKETCH No 12
MILES


N
D.H. HILL
ANDERSON
SKETCH No. 13
MILES

CASUALTIES

Union				Confederate			
Unit	*K&W*	*M*	*Total*	*Unit*	*K&W*	*M*	*Total*
Phelps	37	...	37	Wofford	553	9	562
Cutler	24	5	29	Semmes	577	26	603
Paul	20	...	20	Kershaw	102	2	104
Meredith	57	3	60	Barksdale	251	341	592
Root	5	...	5	Wilcox	442	...	442
Baxter	12	5	17	Wright	290	...	290
Leonard	15	1	16	Mahone	121	...	121
Rowley	13	36	49	Posey	225	65	290
Stone	3	...	3	Perry	109	...	109
Caldwell	232	46	278	Heth	303	...	303
Meagher	71	31	102	Thomas	177	...	177
Zook	110	78	188	Lane	787	122	909
Brooke	83	446	529	McGowan	448	7	455
Sully	16	4	20	Archer	349	16	365
Owen	...	...	...	Pender	683	68	751
Hall	59	8	67	Rodes	628	188	816
Carroll	211	57	268	Colquitt	137	312	449
Hays	268	51	319	Ramseur	680	108	788
MacGregor	88	11	99	Doles	409	28	437
Graham	562	194	756	Iverson	409	77	486
Ward	135	113	248	Gordon	161	...	161
Hayman	313	253	566	Hoke	230	...	230
Carr	439	65	504	Smith	86	...	86
Revere	186	131	317	Paxton	484	9	493
Mott	479	48	527	Jones	472	...	472
Franklin	351	32	383	Colston	722	80	802
Bowman	341	236	577	Nicholls	463	...	463
Berdan	72	12	84	All others	...	500	500
Barnes	44	4	48				
McQuade	55	7	62				
Stockton	20	...	20				
Ayres	21	30	51				
Burbank	125	22	147				
O'Rorke	33	38	71				
Tyler	187	53	240				
Allabach	35	2	37				
Brown	425	86	511				
Bartlett	469	143	612				
Russell	222	136	358				
Grant	334	97	431				
Neill	446	404	850				
Shaler	93	67	160				
Browne	320	22	342				
Wheaton	285	200	485				
Von Gilsa	133	131	264				
McLean	393	299	692				
Buschbeck	255	228	483				
Barlow	9	14	23				
Schimmelfennig	299	120	419				
Krzyzanowski	255	153	408				
Knipe	58	394	452				
Ross	295	204	499				
Ruger	546	68	614				
Candy	370	151	521				
Kane	106	33	139				
Greene	268	260	528				
All others	994	488	1,482				
Totals	11,297	5,720	17,017	Totals	10,298	1,958	12,256

within his lines, "hoping the enemy would attack" him, and sent word to Sedgwick to look after himself, as he was unable to help him. Shortly after dark Sedgwick succeeded in withdrawing to the north bank, in spite of close pressure by the Confederates. At dark on May 4 the situation was generally as shown on Sketch No. 12.

Hooker now was undecided as to his course, so he held a meeting of his corps commanders. He attempted to hold Sedgwick on the south bank at Banks Ford, but orders reached the VI Corps too late again. Finally he decided to withdraw to the north bank the next day via U. S. Ford.

Hooker drew still closer to U. S. Ford. Lee, finding that Sedgwick had escaped him, and that Fredericksburg was also evacuated, moved McLaws and Anderson (24 bns.) back to Chancellorsville with a view to renewing the attack on Hooker. A heavy rain now set in and lasted throughout the night and most of the next day. The VI Corps went into bivouac near Berea Church. At 6:00 p. m. on May 5 the troops were situated generally as shown on Sketch No. 13.

The Union forces commenced crossing at U. S. Ford at 7:30 p. m. and, in spite of a rapid rise in the river, were all across by the following morning.

The Confederates prepared to attack Hooker again on May 6, but found that all the Union troops had crossed to the north side of the Rappahannock under cover of darkness and the storm. A detachment was left to guard the battlefield while the wounded were being removed, and the rest of the Army of Northern Virginia returned to its lines around Fredericksburg. The Army of the Potomac returned to its old camps about Falmouth, where the last troops arrived by May 8. The stubborn fighting, which rivalled that of Antietam, is evidenced by the casualty list shown on page 395.

Excessive Politeness on the Battlefield

From the Notebook of "General Experience"

AT THE battle of Fontenoy (May 10, 1745), when the British arrived at thirty or forty paces from the enemy, the British commander, Lord Charles Hay, called to the foe, "Gentlemen of the French Guard, fire!"

Comte d'Auteroche saluted and replied, "Fire yourselves, gentlemen; we never fire first!"

Corps and Division Insignia

COLONEL GERALD E. CRONIN, 338th Infantry

THE wearing of corps and division insignia by our military forces is a custom which applied only in war time until the passage of the National Defense Act of 1920. The origination of division insignia in our Army may be ascribed to Major Gen. Philip Kearny, one of the noted division commanders of the early days of our Civil War.

Kearny, who had lost an arm in the Mexican War, later resigned from the Army and went to Europe. He served in the French army in Algeria and later in the Solferino campaign of 1859. Here General Kearny derived his idea of military insignia. Early in 1862, while commanding a division in the Army of the Potomac which later became the 3d Division, III Army Corps, he authorized his troops to wear a red Greek cross. This cross, which was cut out of red flannel, was known throughout the Army of the Potomac as the "Kearny Cross."

Within another year the various corps of the Army of the Potomac adopted corps badges. A system of colors was devised—red for the first division, white for the second, and blue for the third. Where there was a fourth division the color was yellow. The designs of the emblems are shown in the accompanying illustration on the following page.

As a result of this plan the Kearny Cross was replaced by a blue diamond and the 1st Division of the VI Corps donned the red Greek cross.

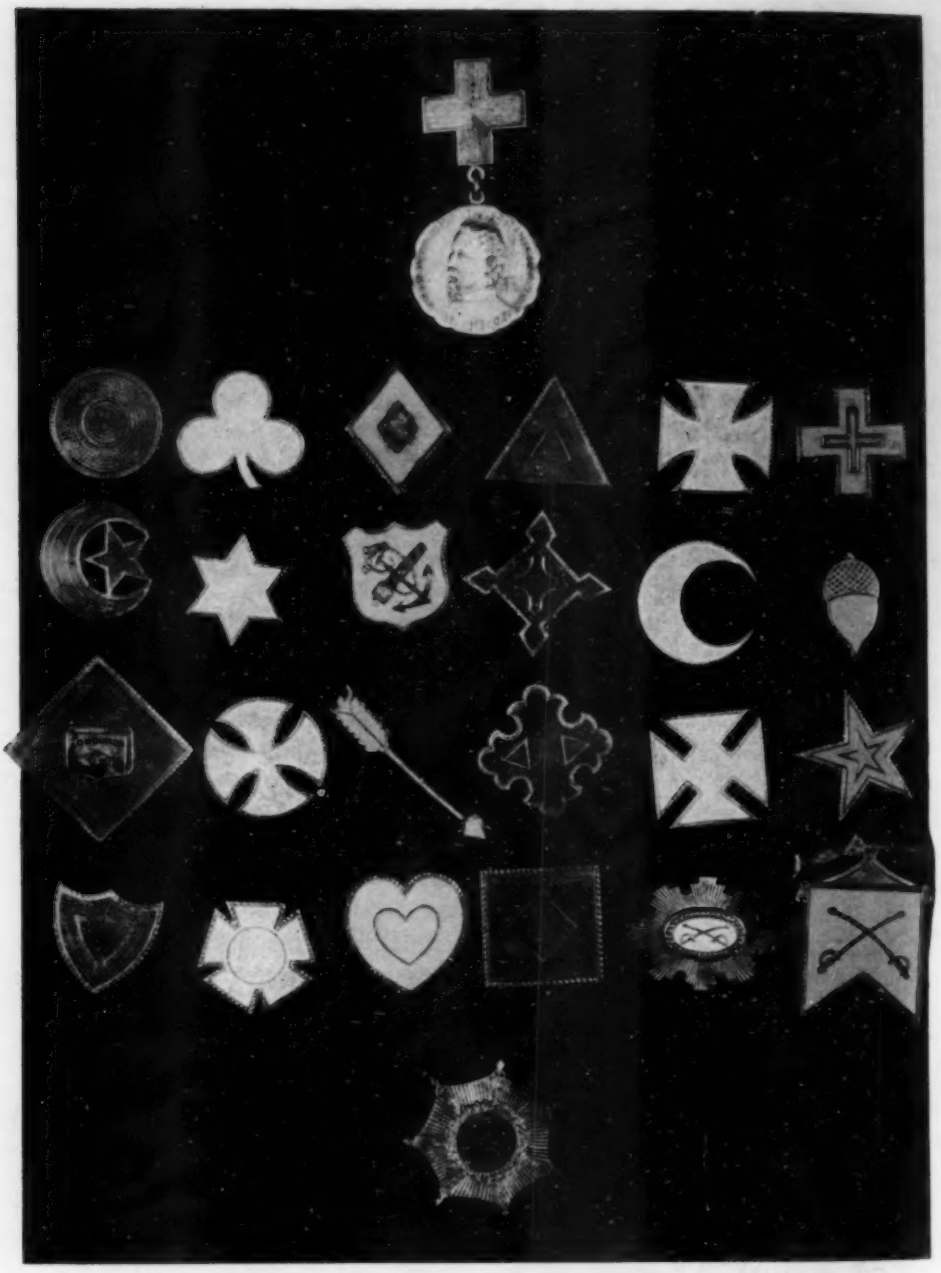
The other army corps soon blossomed out with insignia.

The Western armies did not adopt the corps badges until 1863. After the battle of Chickamauga, the XI and XII Corps, under General Hooker, were detached from the Army of the Potomac to the Army of the Cumberland then besieged at Chattanooga. A story goes that the XII Corps, with their stars, were much quizzed by the Western troops. An Irish soldier of Sherman's old corps, the XV, asked if they of the XII were all brigadier generals. The XII Corps man said "No," and asked Pat what was his corps badge. Pat, placing his hand on his cartridge box, said, "This is my corps badge." The news got to General Logan and he authorized the cartridge box as the emblem of the corps. The other corps soon followed. The XIV Corps, Thomas's old command, now commanded by Major Gen. Jefferson C. Davis, adopted the acorn. This was based on an incident of the battle of Murfreesboro. The XI and XII Corps became the new XX Corps and retained the XII Corps star.

Finally, by the end of the war every corps except the XIII and the XXI had adopted a badge. One corps, the I, had two; when it was reorganized in 1864 under the command of General Hancock it adopted a different badge from that of the former I Corps.

On the demobilization of the Army in 1865, the corps badges were laid away and have since appeared only on Memorial Day and at reunions.

When the Spanish-American War broke out the designs for corps badges were published in War Department orders. Seventeen corps were provided for, but only eight were actually used. The divisional color system of the Civil



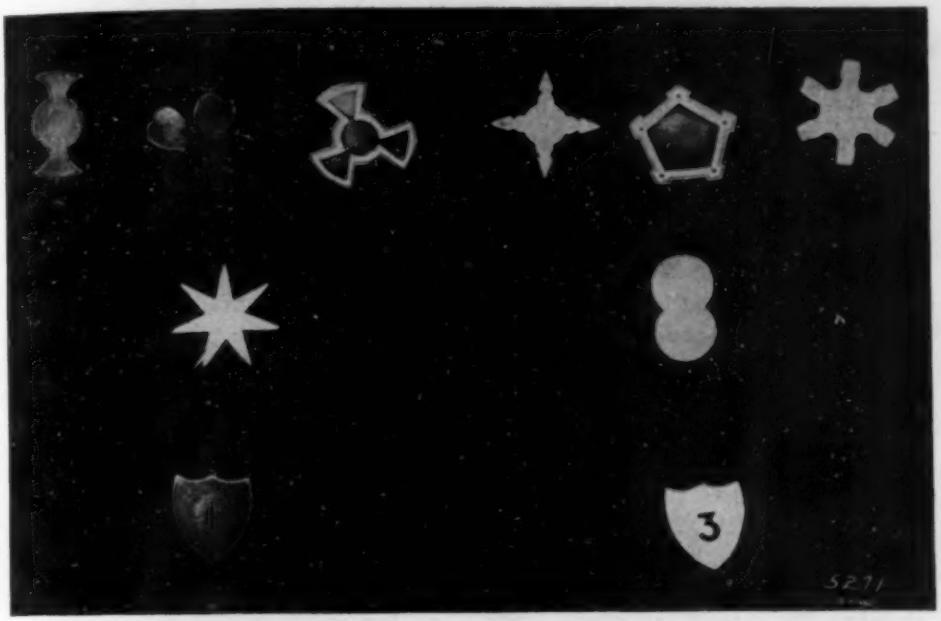
CIVIL WAR INSIGNIA

Kearny Division (2 Div., III Corps, Army of the Potomac)

I Corps[1]	II Corps[2]	III Corps[3]	IV Corps[1]	V Corps[2]	VI Corps[3]
VII Corps[1]	VIII Corps[2]	IV Corps[3]	X Corps[1]	XI Corps[2]	XIV Corps[3]
XV Corps[1]	XVI Corps[2]	XVII Corps[3]	XVIII Corps[1]	XIX Corps[2]	XII & XX Corps[3]
XXIII Corps[1]	XXII Corps[2]	XXIV Corps[3]	XXV Corps[1]	Cavalry Corps[2] (Army of Potomac)	Cavalry Corps[3] (Army of Cumberland)

I Corps
(Reorganized 1864)

[1] Red, to indicate 1st Division. [2] White, to indicate 2d Division. [3] Blue, to indicate 3d Division.



SPANISH-AMERICAN WAR AND 1910 INSIGNIA

I Corps[1] II Corps[2] VII Corps[2] III Corps[4] IV Corps[5] V Corps[4] VII Corps[2] VI Corps[2]

First Field Army, 1910

1st Division[1] 3d Division[3]

[1] Red, to indicate 1st Division. [2] White, to indicate 2d Division. [3] Blue, to indicate 3d Division.
[4] Red, White, and Blue, to indicate corps headquarters troops.

War was retained, and in the corps headquarters troops badge the three colors, red, white, and blue, were combined.

At the close of the war these badges shared the fate of their predecessors of '61 to '65.

In 1910 the War Department worked out the plan of the 1st Field Army, and the corps badge came into being as a peace-time insignia. This was a shield which still preserved the division color system of the Civil War. This plan soon went out into discard, however.

The American phase of the World War was a year old when suddenly a National Army division, the 81st, arrived at Hoboken, enroute to France. The inspectors at the port of embarkation found the troops decorated with many colored wildcats on their left shoulders, and soon the A. E. F. began to blossom forth in division insignia.

The 1st Division adopted the red numeral; the 2d Division an Indian head on a five-pointed star; the 3d Division a series of parallel blue and white lines; the 4th Division a four spray of ivy; the 5th Division a red diamond (same as 1st Division, III Army Corps, 1862); the 6th Division a six-pointed red star; the 7th Division an hour glass which had been evolved from a figure seven; the 8th Division a figure eight pierced by an arrow.

The divisions 9 to 20 did not leave the United States, and some of them did not adopt insignia. However, most of the divisions had insignia, but few were declared official.

The 9th Division had a number 9

in a diamond; the 10th had the Roman X; the 11th, a silhouette of Lafayette; the 12th, a number 12 in a diamond; the 13th, raised at Camp Lewis, Washington, a black cat in a horse shoe; the 14th, a Michigan division, a wolverine; the 15th, a rattlesnake; the 16th, none; the 17th, none; the 18th, a cactus; the 19th, a crescent; the 20th, a skull and cross bones.

The National Guard divisions adopted many interesting emblems. The 26th had the monogram Y.D. (Yankee Division). The 27th Division (New York), in compliment to its division commander, Major General O'Ryan, adopted the constellation Orion. Pennsylvania's 28th Division adopted the keystone. The Blue and Gray Division, the 29th, carried the color scheme of the opposing armies of the Civil War period into its emblem. The 30th Division took both its number and name into consideration in designing its emblem and placed the letters O.H. (Old Hickory) one inside the other and then the Roman XXX in the H. The 31st (Dixie) Division, the last National Guard division to leave the United States for France, had the letters D. D. in a red circle. The 32d Division, Michigan and Wisconsin National Guard, had a red arrow, the counterpart of the 1st Division, XVII Army Corps of 1863. Illinois with the 33d Division had a yellow Greek cross, likewise a counterpart of the Civil War, 4th Division, VI Corps. The location of Camp Cody at Deming, New Mexico, gave the 34th Division an inspiration to have a steer's skull for a distinctive mark. A wagon wheel denoted the 35th Division. The letters T.O. stood for the 36th Division, which was from Texas and Oklahoma and was the last division which left the United States to see combat service in France. A white O on a red circle denoted Ohio's 37th Division. The Cyclone Division, the 38th, composed of the National Guard of Kentucky, Indiana, and West Virginia, had the letters C.Y. on a red and blue shield. The 39th Division, comprising the National Guard of Louisiana, Mississippi, and Arkansas, had a Greek letter delta for an emblem. The 40th Division, Sunshine, from California and other Western States; the 41st, Sunset, from the far Northwest, and the Rainbow Division had emblems which were indicative of their names.

Turning to the National Army divisions, the 76th, New England, had a liberty bell. The 77th, New York City, had the Statue of Liberty. The 78th, Lightning, Division had a flash of lightning on a red background. The 79th adopted the cross of Lorraine. The 80th, from the Virginias and Pennsylvania, had three mountains, a strange parallel to the coat of arms of San Salvador, the last country to go into the war. We have already spoken of the 81st Wildcats. The 82d, All-American, Division, had a double A. The 83d, from Ohio and Western Pennsylvania, had a monogram of the word Ohio. One regiment of this division, the 332d, campaigned in Italy and had as a regimental insignia the Lion of St. Mark. The 84th Division, which was raised at Camp Z. Taylor, Kentucky, had an axe. The 85th, from Michigan, had the letters C.D. (Custer Division). The units of this division that participated in the North Russia Expedition, the 339th Infantry and a battalion of 310th Engineers, had a polar bear. These three units were the only regimental units that boasted distinctive emblems. The 86th Division,

from Camp Grant, Illinois, boasted a black hawk, for it was organized in the country made famous by the Black Hawk War of 1832. The 87th Division, raised at Camp Pike, Arkansas, adopted the acorn, similar to the emblem of the XIV Army Corps of the Civil War. The 88th Division wore a four-leaf clover which was evolved from two figure 8's filled in. The 89th had a monogram M.W. (Middle West). The 90th, from Texas and Oklahoma, used an arrowhead. The 91st, from Camp Lewis, Washington, boasted a pine tree. The 92d (colored) had a buffalo, and the regiments of the 93rd had different insignia, one a rattlesnake, another a steel helmet, and another a bloody hand. There are no records of what emblems the divisions from the 94th to 102d had. These divisions were organizing in Porto Rico and the United States when the war ended. The A. E. F. of Siberia had a Russian bear on a shell.

We now come to the corps badges, of which there were nine. The I Corps used a white circle on a blue field. The II, which fought on the British front, had a British lion and an American eagle on either side of a Roman II. The III adopted a white triangle with blue pyramids on the side. The IV took a circle bisected diagonally in four quadrants, two blue and two white. The V had a white and blue pentagon. The VI used a white six on a blue circle. The VII wore a white seven on a hexagon. The VIII used an octagon, and the IX Corps had a red circle and the Roman IX within.

The First Army wore a black A, the Second a B and the third, the Army of Occupation, had a red A within a red circle with a blue background.

Over and above all the armies was G. H. Q., the emblem of which was a circle evenly trisected into the three primary colors, red, white and blue.

An Early Use of Distinguishing Insignia for Troops

From the Notebook of "General Experience"

AT THE battle of Agincourt it was ordered—

"Everi man, of what estate, condicion or nation they be, so that he be of our partie, shall bere a signe of the armes of St. George, large (bothe before and behinde) upon parell that yf he be slayne or wounded to deth, he that hath so doon to hym shall not be putte to deth for defaulte of the cross he lacketh. And that non enemy do bere the same token or cross of St. George upon payne of deth."

Peace-Time Morale

A company officer discusses one of the company officer's problems

LIEUTENANT JOHN G. HILL, Infantry

FROM time to time, in both peace and war, there is something said or written about morale. Inspectors look for morale and rate the units that they inspect under this heading. However, since the inspector's rating is based largely on comparison, and a cursory examination at best, a rating of "average" or above does not necessarily mean that the morale of a unit is as high as it could be or should be.

High morale in peace time is vastly more difficult to attain than it is in time of war. In war there is usually the intense patriotism of an aroused people, which engenders enthusiasm of a high order. The inspiration of a young citizen army, serving only for "duration," is easily fired. It is easy to stir up enthusiasm then, and many of the factors which are paramount at that time have a much smaller place or disappear altogether when peace comes again.

The morale of a unit is affected by things as numerous and varying as the local conditions in any given post which may contain a garrison. Climate, proximity to a large city, and the like, all wield their influence on morale in one way or another.

The officer personnel is the prime motive force in engendering this morale. Of the officers, those below field grade, in other words, the company troop, and battery officers, are the ones most directly connected and therefore the most responsible. In fewer words, the unit commander is responsible for the state of morale in his organization.

Regulations bestow on the shoulders of these unit commanders many burdens, and not the least of these, but unfortunately one which is often given little attention, is morale. Due to the fact that a large majority of the officers in the Army below field grade saw their first service with a war-time army, where enthusiasm was easy to attain and morale was ready-made, so to speak, they have only a dictionary acquaintance with the word. It is safe to say that many of them, if asked out of a clear sky what it meant, would be at loss to answer.

Morale, as the word slips off the tongue, is an abstract, somewhat vague term. But, when viewed from the standpoint of results attained by a unit, its meaning and importance become very evident. Napoleon wrote to the effect that three-fourths of the results attained by an army might be ascribed to the state of its morale. The experience of armies before and since that time have proven that the Corsican knew whereof he spoke. Probably the best visible evidence of high morale in a unit is what is described by the French as *elan*. The word has no English equivalent. It is a certain sureness or jauntiness of carriage, born of confidence in self, associates, equipment, physical well-being, and satisfaction, to a certain extent, with surroundings.

In the following paragraphs I shall

leave out the factors over which the unit commander may have little or no control, and shall discuss only those over which he exerts, or should exert, a ruling influence. First let me say that any man may be made to work, but it is only the man who really puts his heart in the work who achieves satisfactory results. Therefore the will to work must be injected into an organization. Until this happens, things stand still of their own inertia. Once the system is in vogue it will roll on its momentum with a minimum of effort from the directing force.

First I shall discuss systemization of work. In every organization there are deadbeats. I refer to those who are able, by devious ways, to beat the duty roster. They operate in various ways but always with the same result; someone else does their work and the morale of the unit suffers for it. Systematic parcelling out of the work so that each man has his own work to do, and then making sure that he does it, will bring astonishing results to those who have never tried it before. In the deadbeat class falls the soldier who consistently works the company commander for a pass when it comes his turn to perform some week end or holiday duty. I have seen this worked successfully so often that I could consider it a safe wager with any company officer who has not given the subject some conscious attention that he has had it "pulled" on him.

How about the other side of the picture? A certain lieutenant reported to an organization for duty. There was a lot of work to be done and the lieutenant looked forward to a hard season. Much to his amazement and delight the work ran off so smoothly that one day he commented on it to his company commander. The captain said, "When I came here, I found Smith and Jones doing all the work. Naturally they had more than they could handle and were dissatisfied. I give each his own work to do and then see that he does it myself. As a consequence none of you are overworked and everyone is satisfied." Therein lay the secret of the changed morale in that company.

Another factor in the attainment of good morale is betterment of the surroundings. If a soldier looks out of the squad room window and sees a squalid back yard or a dirty, unkept front yard, the incentive to keep the inside looking spick and span is gone. A disorderly or dirty orderly room or supply room has the same effect. If he comes from such surroundings, he will be perfectly content to remain in them. If he comes from better surroundings, he will resent and attempt to escape from the poorer environs in which he finds himself. Making the environment attractive does not require the expenditure of a great deal of money, but it does require careful planning, application, and the cooperation of all.

A captain reported to a regiment from the Infantry School. He was given a company that was in poor shape as to morale and discipline. In six months his company was pointed to as being the best in the regiment. He had model squad and supply rooms. His company won the baseball championship of the regiment and was equally prominent in other activities. This was accomplished simply through the personal efforts of the company commander, who succeeded in interesting the men in their work and surroundings because he was interested in them.

Now a word about messes and mess halls. When things do not seem good it is almost a rule for the mess to receive a certain portion of the blame. Too often the corrective measures are applied at "the right church but in the wrong pew." Many soldiers will grumble at the food served, go down town and pay for a meal no better than the one they left, but receive infinitely more satisfaction from it. Why? Because Mr. Soldier is dressed up. He is served by a waiter who is cleaner than the slovenly K.P. who served up his food in the mess, and his surroundings are more attractive. Not infrequently it will be found that the real dissatisfaction lies in the fact that the men are allowed to appear in improper uniform, some unkempt or dirty, and that they show such poor table manners that if, in addition, the food is poorly served or a dish is dirty, the excellence of the food is entirely lost in disgust at the whole lay-out. If the place and people present a respectable front, it will go far toward producing satisfaction in a mess.

Last, and most important, is the soldier himself. He must never forget that he is a soldier. A man enlists and draws twenty-one dollars a month. We must all admit, presuming that there was no exterior pressure which caused him to enlist, that a man must find some glamor or fascination in the business of soldiering to cause him to give his time to the government for this remuneration. Small wonder then that, when he finds himself doing a large amount of fatigue, and finds no one especially interested in making a soldier of him or in instilling in him an esprit de corps, he sometimes deserts, or refuses to reenlist, or wants a transfer.

One hears a great many ready and specious reasons why conditions cannot be improved. Let us look at some of them.

1. So few men are turned out for drill that it is impossible to have a good drill session.

This is absurd. It merely offers a better opportunity for individual instruction in disciplinary drills, and so makes for individual excellence and a chance to develop the competitive spirit. Again, a soldier will take more interest in himself if he finds others taking an interest in him.

2. The uniform cannot be made to look smart.

This is equally absurd. An inspection is held every week. If a soldier has a fair shine on his shoes, a clean rifle, and no spots on his clothes, he gets by. It is not asking too much to make him have his buttons shined, the visor of his cap shined, and his equipment and clothing immaculate. There is no uniform that will look smart if not made to look so. The uniform of the American Army stands on equal terms with any other—if it is properly treated.

3. The men are of a low quality.

Only poor workmen quarrel with their tools. Any man who can dodge a Section VIII board can be made into a fair soldier.

4. The noncommissioned officers are not what they should be.

Every time you find a poor set of noncommissioned officers, you will find either that they were poorly selected in the first place, or that they are poorly led. In either instance the remedy lies in careful personal supervision and work with them, or in getting rid of the ones that fail "to produce."

It is not real military work that

causes the soldier to seek new fields. It is a lack of it that causes him to do so. But this work will never be done unless it is started. The person to start it is the unit commander. None of the things above mentioned require a genius to execute them. They do require personal application and work.

In closing let me say that none of the foregoing is written in a sense of unfair or destructive criticism. Any of the defects and suggested remedies mentioned can be witnessed in operation in the average station of troops today. In some places one fault may be corrected while the others slip by unseen. The secret of success in this direction lies in closer supervision and the realization that no two organizations present exactly the same problem to the unit commander.

Attention to these things brings direct results. A higher morale brings increased efficiency, better soldiers, less desertion, and more reenlistments to the organization.

Peace-Time Morale—A Case in Point

FEWER soldiers of the II Corps Area were involved in offenses requiring general courts-martial action in 1928 than in 1927.

In 1927 the 1st Division handled 602 general court-martial cases, and headquarters of the corps area handled 191 additional cases.

In 1928 the figures show a reduction of practically one-half. In that year the 1st Division has only 324 cases and the headquarters of the corps area only 116 cases.

Several causes have contributed to this improvement. Important among them are: more careful selection of men, improved living conditions, close and sympathetic supervision by officers, and general close cooperation by everyone concerned and especially by judge advocates.

The Civil Government of the Philippine Islands

First Lieutenant Elam L. Stewart, 24th Infantry

THE political life of the Philippine Islands still remains to be a very live and vital question for the United States after an occupancy of more than a quarter of a century. Army officers stationed in the archipelago will better appreciate their service there if they are familiar with some of the facts concerning the government in the Islands as compared to their home government. It will be well to begin by recalling some of the facts that led to the acquisition of this large group of islands in the Pacific.

The occupation and subsequent control of the Philippines was an incident of the Spanish-American War of 1898. The United States had at no time intimated the desire for territorial expansion. Upon the outbreak of the war with Spain the Asiatic fleet, under command of Admiral George Dewey, was stationed in China waters. Since the Spanish fleet was at that time in Manila Bay, Admiral Dewey was ordered to proceed there and capture or destroy it. Dewey accomplished his mission by destroying the enemy's fleet on May 1, 1898, an event which made him an outstanding figure in American naval history.

Upon the destruction of the Spanish fleet, Gen. Emilio Aguinaldo, then leader of the Filipino revolutionary forces, was in Singapore awaiting the enforcement of promised reforms of the Spanish government. Hearing of the success of American forces at the Battle of Manila Bay, General Aguinaldo decided to return to Manila and carry on his fight for the reforms promised him, and eventually to establish a government. In this he was unsuccessful. He later became commander of the Filipino *insurrectos* against the United States. He was finally defeated and captured by Gen. Frederick Funston, which brought to an end activities against American rule in the Islands. The American Army and Navy captured the city of Manila on August 13, 1898. This is known in the Philippines as "Occupation Day" and is now celebrated with appropriate ceremonies.

President McKinley's position in regard to the Philippines discloses that they were one of the gravest problems that resulted from the War with Spain. He said, in part:

> The truth is, I didn't know what to do with the Philippines, but Dewey was in China and the Spanish fleet in Manila Bay and I was forced to order him there to capture or destroy the enemy. If I had not done so, the enemy fleet would probably have crossed the Pacific and landed forces on our western coast. I walked the floor of the White House night after night endeavoring to decide upon this great question. I decided the best course for a Christian nation to follow was to take over the Philippines, educate the people, Christianize the nation, and do the very best that we could for them. Having decided on that step, I called in the chief engineer of the War Department and told him to put the map of the Philippines on the map of the United States.

The Spanish and American commissioners met in Paris on October 1, 1898, to decide upon terms of treaty. There

were many differences among the representatives on both sides as to what part of the Philippines would be taken over by the United States. Several were in favor of taking possession of only the island of Luzon. However, instructions from the War Department stated that leaving the rest of the islands to the control of Spain would be cowardice on our part and could not in any way be justified. The treaty was finally agreed upon and signed on December 10, 1898.

Some of the more important terms of that treaty are: (*a*) That the United States will pay to Spain the sum of $20,000,000.00 within three months after ratification of the treaty; (*b*) that the civil rights and political status of the people of the Philippines shall be determined by Congress. In 1900, another treaty was made whereby the islands of Sulu and Sibutu were annexed to the Philippines, Spain receiving the sum of $200,000.00 for these groups.

There were long discussions in the United States Senate as to the terms of the treaty drawn up by the commissioners. The members of that body were evenly divided on the Philippine question. The firing of the shot by the Filipino insurgent on January 4, 1899, had the effect upon the United States of creating strong public opinion favoring the ratification of the treaty. Two days after the shot was fired the Senate ratified the Treaty of Paris with stipulations as above.

With the acquisition of the archipelago came the beginning of the process of establishing a proper government. Along with that big problem came the difficulties of occupation of the Philippines, and both proved to be hard and tedious tasks. A number of conditions made the work very difficult for the pioneer officers. A different race of people had to be dealt with; the advent of the white man in the Orient was not looked upon with favor; the people had their own long established customs; the long oppression of the people under Spanish rule had created a desire for self-government; the suppression of education had resulted in gross ignorance among the people.

With the treaty ratified and the Philippines a part of the United States, some form of government had to be established without delay. Military districts were formed with Army officers in command. The towns within the districts were also commanded by Army officers. The first form of government, there, was a military one; circumstances made it a military government, for the only Americans there in 1899 were those in the Army of Occupation. A short time after the treaty was ratified, the President appointed a commission of six men, most of whom were Army officers stationed in Manila, to make an investigation and to report upon conditions in the Philippines. It had no legislative power. This was known as the First Philippine Commission.

The Second Philippine Commission was appointed in 1900. This commission was composed of civilians and was vested with the power to make laws. The governor of the Philippines was known at this time as the military governor and had full authority in districts where the insurrection still continued.

In 1901, the Spencer amendment took the power of government out of the hands of the President as commander-in-chief of the Army and placed it in the hands of Congress. From that time

the Philippine government has been purely a civil one. On June 1, 1901, the President issued an executive order which took the power out of the hands of the Second Commission and the military governor, only where needed, and appointed William Howard Taft as the first civil governor of the Philippine Islands.

THE ORGANIC LAW OF THE PHILIPPINES

Organic law is defined as the constitution of a state—a system of laws which establishes the government and defines the relations of the individuals to it. After the acquisition of the Philippines, the legal question was raised as to whether or not the fact of acquisition carried with it the extension of the full force of the American constitution. This point was soon settled by the Supreme Court in the insular cases, which declared that the constitution did not necessarily apply to the new territory. However, one exception to this ruling is the slavery amendment, due to its universal application. The Supreme Court further ruled that no law of the United States shall apply to the Philippines unless so stated in the law. To use a popular phrase, the American constitution did not follow the flag to the Philippines. For example, the eighteenth amendment does not extend to the archipelago at this time.

There are three provisions of organic law which have been in force in the United States for years that do not now exist as a part of the organic law of the Philippines. They are (1) trial by jury; (2) billeting soldiers in private dwellings in time of peace; (3) the right to keep and bear arms.

The Act of Congress of August 2, 1916, is the most recent law passed by Congress which concerns the Philippines; it is known as the Jones Law. This act promised political freedom under certain conditions. Congress has the power to amend this act, and if the independence of the Philippines is ever granted it can be accomplished by an amendment.

Although the Philippines has its own legislature and makes its own laws, the administration of the Philippines is supervised by the Bureau of Insular Affairs of the War Department. Practically all instructions to the Philippine government pass through this bureau. The chief of the bureau is appointed for a period of four years and holds the rank of brigadier general. He has two assistants, a colonel and a major. The Bureau of Insular Affairs furnishes the President and the cabinet with information of the Philippines as called for. It does not exercise jurisdiction over matters that pertain to local government. A War Department memorandum (March 14, 1914) stated the purpose of the bureau: "To avoid interference with government there established, and to protect such government as far as possible from interference by other departments and branches of our government."

The Philippine government is organized into three general divisions: executive, legislative, and judicial.

The administrative duties of the Philippines are carried on by six executive departments: interior, public instruction, finance, justice, agriculture and natural resources, commerce and communications. Each department has control or direction of the bureaus under its jurisdiction.

In order to have a body that could advise the Governor-General on matters of importance from time to time, the Council of State was organized in 1918.

It is composed of the department heads and members of both houses of the legislature. It meets about once a week and is one of the most important bodies of the present government.

The Governor-General is invested with executive power comparable to that of the President of the United States. However, he rarely takes any action without advice of the Council of State. He is appointed by the President of the United States for an indefinite period. He has the following powers: he can veto measures passed by the Philippine legislature; if he refuses to sign a law after it has passed over his veto he can submit it to the President of the United States for final action; he is the commander of the National Guard and the Constabulary; he can call out federal troops stationed in the Philippines; he can appoint all public officials except the vice governor, the auditor, and justices of the supreme court; he can grant pardon; he can remove public officials without the consent of the legislature; and he has complete supervision over correspondence with foreign powers.

The vice-governor-general is appointed by the President with consent of the Senate. He acts as Governor-General during the absence of the latter. He is also superintendent of public instruction of the Philippines.

The Philippine legislature is composed of two bodies—a senate and a house of representatives. All of the members except those who represent non-Christian tribes are elected by the people. The legislature has power to enact laws not expressly prohibited by the laws of Congress of the United States. The legislature has great power and influence in the present government in the Islands. The presiding officers of the two houses are also members of the Council of State. With the Governor-General, they control public corporations like the Manila Railroad, the Philippine National Bank, and others. The joint approval of these three officials is also necessary to authorize appropriations of funds for national emergency. The senate has additional powers, which are the right to confirm appointments, change import duties on rice, and control public lands.

The senate has twenty-four members, two from each of the twelve senatorial districts created by the Jones law. Manila and the province of Rizal are in the 4th District. Twenty-two of the senators are elected by the people of their districts. Those who represent the district that includes the provinces of Mindanao and Sulu (non-Christian tribes) are appointed by the Governor-General. One half of the senate is changed every three years. To be eligible for election the senator-elect must be thirty years of age, must be able to read and write either English or Spanish, and must have been a resident of the district from which elected for two consecutive years prior to election.

The house has ninety-nine members, nine of whom are appointed by the Governor-General to represent non-Christian tribes. A member of this body must be at least twenty-five years of age and able to read or write either English or Spanish.

The Philippines are represented in the American Congress by two resident commissioners elected by the Philippine legislature. These members enjoy the same rights as congressmen, except that they have not the right to vote.

Now we come to the last and one of

the most important parts of the government of the archipelego, the judiciary. The judicial powers are vested within the following courts: the Supreme Court, courts of First Instance, Justice of the Peace courts, and the city court of Manila. The Supreme Court of the United States is also considered as a part of the Philippine judiciary.

Justices of the Philippine Supreme Court are appointed by the President for life, with the consent of the United States Senate. Judges of the First Instance courts and justices of the peace are appointed by the Governor, with consent of the Philippine Senate. Judges of the city court of Manila are appointed by the Governor.

Courts of the First Instance are established throughout the Archipelago, which is divided into twenty-three districts. There is one judge in each district except the city of Manila, where there are four.

Justices of the peace appointed by the Governor are located in most every city. They have powers similar to those officers in the States.

Manila is the only city in the Philippines in which there is a city court. Criminal cases are the usual kind of cases heard in this court.

The Supreme Court of the United States is the final appeal of all cases that originate in the Islands. It has jurisdiction in all cases in which the constitution, treaty, right, or privilege of the United States are involved. Questions that involve amounts to exceed 50,000 pesos may be carried to the Supreme Court on appeal; any smaller amount has final appeal in the Philippine Supreme Court.

The Philippines are divided into provinces which correspond to our own states. The highest officer in each province is the governor. On his staff are a secretary-treasurer and a third member elected by the people. These officers have right of power over many matters which arise in each province. Provincial governments cannot make laws; in this respect they differ from our own state governments. The law-making power in the Philippines is vested in the legislature. In all provinces except Mindanao and Sulu, the local officers are elected by the people. In the latter, the governor is appointed by the Governor-General, with the consent of the Philippine Senate. The governors of the provinces are responsible that all laws are carried out, and are required to make reports to the Governor-General from time to time on conditions in their provinces. They have full executive power over police and the Philippine Constabulary within their provinces. They may request the aid of federal troops, with the consent of the Governor-General.

The form of municipal government is very similar to that of American cities. Cities are divided into four classes: 1st class, 25,000 population; 2d class, 18,000 but less than 25,000 population; 3d class, 10,000 but less than 18,000 population; 4th class, less than 10,000 population.

The officers of a city are a president, a vice-president, a treasurer, and councillors or aldermen. Each city maintains a fire and a police department. The number of councillors depends upon the population of the city. Each city is divided into *barrios* for the purpose of administration. Each *barrio* also has a police department under the control of the city in which it is located. The duties of the officers of the cities are

very similar to those of any American city. The salaries of the presidents and secretaries of the cities vary from 300 to 1,200 pesos per year.

Two cities in the Philippines have separate charters. This is because these cities are quite modern and it was thought advisable that they be granted the right of special laws by which they would be governed. They have government administrative offices practically the same as other cities, but the mayor is appointed by the Governor-General, with the approval of the Philippine Senate, for a term of three years. His duties are those of the mayor of any city in the United States the size of Manila (350,000) or of Baguio.

The municipal board of the city council of Manila is the legislative body of the city and makes laws for the city. It consists of ten members elected from the city at large every three years. This form of city government is comparable to the commission form that we see in this country. Any number of residents of Manila may be candidates for the council, and the candidates who receive the highest number of votes are declared elected. At the time of election they must be twenty-three years of age and have been residents of the city for one year.

The city government of Manila is divided into six main departments, which are as follows: engineering and public works, police, law, fire, finance, assessments.

In each city there is a chief of police and such number of policemen as the city council may decide. Chiefs of police are appointed by provincial governors, with the consent of city councils. The other members are appointed by the municipal presidents, with the consent of the councils.

The chief of constabulary is empowered to fix regulations for the discipline of the police department in each city. In each province there is an examining board which examines applicants for appointment to the police department. Appointments are generally made from the list of successful applicants. The constabulary not only fixes regulations for the conduct of the police, but also prescribes uniforms and equipment for the police departments.

So we see in outline the form of government that has developed in the Philippines since they became a part of the United States. It is the government under which military men on duty in the Philippines live and which they cooperate with and support.

Notes from the Chief of Infantry

Commissioned Personnel, Office Chief of Infantry

Chief of Infantry
MAJOR GEN. ROBERT H. ALLEN

Executive
COL. LORENZO D. GASSER

Section I—Personnel
COL. C. C. ALLEN
MAJOR R. E. O'BRIEN
MAJOR L. S. HOBBS

Section II—Intelligence
MAJOR T. B. CATRON
MAJOR S. J. CHAMBERLIN

Section III—Training and Inspection
MAJOR B. MAGRUDER
MAJOR C. H. BONESTEEL
CAPT. W. G. LAYMAN

Section IV—Arms and Equipment
LIEUT. COL. E. M. WILSON
MAJOR H. TERRELL
MAJOR T. LAWRENCE

Section V—Mobilization and Organization
LIEUT. COL. M. H. THOMLINSON
CAPT. P. E. LEIBER

Comparison of Rifle Records from 1924 to 1928

SURPRISING progress in excellence of rifle shooting in the Infantry has been evidenced during the last four years. The percentage of men on the rolls who have completed the course has progressed from 71.05 per cent in 1924 to 89.84 per cent in 1928. The percentage qualified of those who completed the course has increased from 89.65 per cent in 1924 to 93.76 per cent in 1928. The percentage qualified of those on the rolls (the true measure of the rifle effectiveness of Infantry in target practice) increased from 64.02 per cent in 1924 to 84.23 per cent in 1928, *a 20 per cent increase in the number of qualified Infantry riflemen.* These increases in the proficiency of rifle firing in the Infantry have been made in spite of the ammunition reduction of 1926. A compilation of the consolidated records of rifle firing of Infantry regiments from 1924 to 1928 follows:

	1924	1925	1926	1927	1928
(1) Number on rolls required to fire the rifle	31,365	29,822	27,601	25,738	27,005
(2) Number completing the course	22,387	22,198	22,489	21,680	24,260
(3) Percentage on rolls completing course. (2) divided by (1)	71.05	74.20	81.50	84.23	89.84
(4) Number of men who qualified	20,079	20,172	20,418	19,716	22,747
(5) Percentage qualified based on number completing course. (4) divided by (2)	89.65	90.80	90.80	90.94	93.76
(6) Number on rolls who failed to qualify. (1) minus (4)	11,286	9,650	7,183	6,022	4,257
(7) Percentage qualified based on number on rolls. (6) divided by (4)	64.02	67.64	73.98	76.60	84.23
(8) Average score per man	277.90	277.00	274.20	276.00	276.40
(9) Ammunition allowance	450	450	220(150)	220(150)	220(150)

The record shows the most pronounced annual improvement was made from 1927 to 1928. As compared with 1927, 5 per cent more of the men on the rolls completed the course; 3 per cent more of those firing qualified; and 8 per cent more riflemen in the Infantry held a qualification. Only 4,258 men of 27,000 riflemen remained unqualified in 1928, 1,764 fewer than for the target year 1927. This most satisfactory record is very pleasing to the Chief of Infantry. He considers that the soundness of the policies which have insisted on the full use of small-bore practice and the requirements which have decreased the number of men who can be excused from firing have now, by the excellent record of 1928, been forcibly proven.

In analyzing the above compilation, of four years firing, it can be seen that steady improvement has been made in the percentage of men on the rolls who completed the course, in the percentage qualified based on the number who completed the course, and on the percentage qualified based on the number on the rolls. Each year's record in these respects has been an improvement over that of the preceding year. As a corollary to the increase in qualification, a steady decrease in the number of unqualified men in the Infantry is evident. The average score per man has remained more or less constant. This constancy, however, is encouraging, since undoubtedly, in 1924, many of those who did not fire were known to be poor shots and various pretexts were found to excuse them from firing, whereas in 1928, under existing regulations, these poor shots fired the course.

Motorized Infantry Regiment

THE War Department has given final approval to the general type of motor vehicles for the 34th Infantry in its coming motorized experiment. Instructions have been issued to the supply services to procure the approved equipment. It is expected that the vehicles will be in the hands of the 34th Infantry not later than August 1, 1929.

In selecting the general type of equipment three important factors have been paramount. First, the vehicles, at least the chassis, should be of commercial stock readily procurable in large quantities; second, all vehicles comprising the regimental equipment must have the same approximate road speed; and third, all vehicles must have cross-country ability at least comparable with that of animal transport.

The general types of vehicles contained in the War Department approval are as follows:

23 cross-country cars;
9 cross-country cars with light cargo body;
19 1½-ton cross-country trucks, 4-wheel drive;
15 ¾-ton cross-country trucks, 4-wheel, 2-wheel drive;
14 ¾-ton cross-country trucks, 6-wheel, 4-wheel drive;
5 tractors, 3½-ton;
5 rolling kitchens, trailer type;
8 motorcycles, with side cars;
1 truck, gasoline, 750 gallons.

Except the last three types, all vehicles will be procured in the commercial market. The excepted vehicles will be supplied from the standard stock on hand. Five of the cross-country cars, the ¾-ton cross-country trucks, and the

tractors will be commercial types as to both chassis and body, the 6-wheel, ¾-ton trucks being especially equipped with the additional axle. The remainder of the equipment to be purchased will consist of commercial chassis with modified or specially built bodies. All vehicles will come equipped with oversized tires.

The distribution of this equipment within the 34th Infantry will necessarily be left to the discretion of the regimental commander. His decision as to the type best adapted to given purposes will be based on experiment. However, in selecting the types, an attempt has been made to choose vehicles that will in general be suited to certain tasks. For instance, it is expected that the 1½-ton trucks will be best adapted to replace the vehicles of the field train. The cross-country cars are to replace riding animals and to carry nuclei of personnel to operate auxiliary weapons. The ¾-ton trucks, both 2 and 4-wheel drives, and cross-country cars with light cargo bodies will be suitable for carrying auxiliary weapons and as combat train vehicles. A variety of types suitable for light loads has been provided in order that comparison may be made with a view to selecting the most suitable ones. For example, for comparative purposes, one platoon of a machine gun company may be equipped with cross-country cars with cargo bodies, the other platoon with ¾-ton trucks, 4-wheel drive; the other company may have one platoon equipped with 6-wheel vehicles and the other with 4-wheelers. The experiments will, of course, be conducted in actual phases of combat. After these experiments, the same vehicles, similarly distributed, can be used to test out their comparative suitability as combat vehicles. Then other combinations can be tried out until each unit commander, working with all types and being able to compare them, can report as to the best type for his purpose. The tractors were included in order to obtain a test of their usefulness in comparison with the faster road vehicles. There was not provided, organically, any equipment for carrying the remaining personnel; it was assumed that such equipment would be provided from a motor transport post when and for as long as occasion may demand that the regiment be entirely motorized.

The equipment supplied will afford complete tactical motorization for regimental equipage, communications equipment, and auxiliary weapons, including a nucleus of personnel to operate such weapons. Strategical mobility for the regiment as a whole can be quickly obtained by allotting a group of heavy road vehicles for the purpose of transporting the foot personnel. The organic regimental motorized equipment, except the five tractors, can travel at convoy speeds as well as with troops on foot. This equipment therefore provides both strategical and tactical mobility. In this respect, the scheme of motorization in prospect for the 34th Infantry is a distinct advance over World War motorization in which strategic mobility was readily obtained by transporting personnel, but in which tactical mobility was entirely absent due to loss of trains and other means of organic transport pending arrival of horse-drawn elements. The equipment listed for this experiment is not to be assumed as the correct amount for motorizing a regiment. The number of vehicles furnished is based merely on the amount of money available.

Infantry Team—National Matches

PLANS are nearing completion for the organization and training of the Infantry Team for the National Matches of 1929. Major Bradford G. Chynoweth has been designated as captain of the team for the coming matches. A nucleus of the team is assembled and under training at the Infantry School.

The plans for the organization and training of the team are essentially the same as for the matches of 1927 and 1928. After completing the preliminary period of training at the Infantry School the squad will be collected and quartered at the Erie Ordnance Depot, where the Camp Perry range may be used. The methods of training to be pursued will be those outlined in Rifle Marksmanship. A generous amount of so-called "dry shooting" will be included in the schedules of training. For the first time in training the Infantry Team, it is expected that there will be full use of small-bore shooting.

Regimental commanders have been most energetic in the development of team material since the last National Match. Some very promising prospects have been developed in regiments.

Development of Infantry Organization and Equipment

THE Chief of Infantry has recently instructed the Infantry Board to study the organization and equipment of Infantry in the light of post-war development, and to recommend such changes as may now appear appropriate.

The present Infantry organization and equipment are based on studies made immediately after the World War. In these studies the organization, equipment, and tactics of that conflict exercised a preponderant influence. Since that time the lessons of the World War have been more thoroughly digested and many developments in matériel have ensued. There are other developments in matériel now in progress. These developments aim primarily at an increase in fire power, mobility, and shock action of infantry. It is inevitable, in view of these developments, that our Infantry organization and combat methods must eventually undergo radical changes in order to secure maximum efficiency on the battlefield. Some of the developments parallel old equipment and weapons. Other developments, such as cross-country vehicles and new tanks, are not at present found in our Infantry equipment. Experience teaches that improved weapons and equipment, which parallel those now in use, are very slowly supplied during peace, because economy demands that existing equipment, which in many cases is on hand in large quantities, must be used up, whereas new equipment, having no existing counterpart, is more generously provided.

Post-war developments that parallel the rifle and the machine gun are the semi-automatic shoulder arm and the light machine gun. Some time will

elapse before these weapons can be further developed and supplied in such quantity as to warrant organizational changes. Cross-country vehicles and tanks, on the other hand, are new. Since replacement of transportation and animals is always necessary, the increased use of motor vehicles in Infantry organizations and the consequent increase in mobility would seem something which the Infantry is rapidly approaching. For the above reasons, it appears that the present studies on changes in organization and equipment of infantry should tend in the direction of increased use of caliber .30 machine guns and automatic rifles for the increase in fire power, and to a greater use of mechanical transportation in order to retain the mobility jeopardized by heavier armament.

Reorganization of the Academic Department, Infantry School

THE reorganization of the Academic Department, the Infantry School, has been authorized for the 1929-1930 school year. The old 5th Section of the Department, as set forth in Army Regulations 350-200, has been eliminated and the subjects included in the other four sections have been rearranged. The reorganization is experimental for the 1929-1930 school year. Based on the experiment, a final decision will be made as to future reorganization.

The Academic Department as reorganized for the next school year will be:

1. *First Section.*—Tactics, to include the reenforced brigade; command and staff; organization; troop movements; combat orders.

2. *Second Section.*—Supply; medical service; communications and command posts; staff technique; topography and field engineering; training; close-order drill; military courtesy and customs of the Service; Army of the United States; animal management and transportation; equitation; physical training.

3. *Third Section.*—Infantry weapons.

4. *Fourth Section.*—Military history; instructional methods; public speaking; parliamentary procedure; psychology; infantry correspondence courses; editing, mimeographing, and distributing instructional matter; mailing list and supervision of drafting and lithographing work.

The rearrangement of subjects places those closely allied under the same head. It is expected that the work of the instructors, under the new arrangement, can be more equitably divided.

Target Reports

THE Chief of Infantry has recently submitted to the War Department a revision of Army Regulations 345-1000, accompanied by revised forms 90 and 91, to cover records and reports of target practice.

Resulting from a study which has been in progress for some time, a complete revision of Army Regulations 345-1000 has been made. The proposed regulation contains the complete instructions for the preparation and sub-

mission of target reports. Its approval will automatically eliminate such instructions from the training regulations of the various weapons. This will, in effect, collect and place in one pamphlet all the necessary instructions that refer to target reports.

Forms 90 and 91, Target Reports, have been completely revised. The recommended forms are adapted to the use of all branches of the service and for all arms of those branches, without modification. The headings have been simplified and clarified. It is expected that greater uniformity in data contained on target reports will be obtained by the use of the new forms.

Reduction of Animals

IT SEEMS probable that the Infantry, by June 30, 1930, must again meet a reduction in the allowance of animals. It is estimated that this reduction for the Infantry as a whole will be approximately 325 animals. The method that will be pursued in meeting the reduction is at present under study.

Since reorganization after the war, the Infantry, as well as other branches, has had to meet successive reductions in the allowance of animals. At present the Infantry is operating under the allowance of 1923, modified. The reduction of 1923 was met by a vigorous reduction in regimental transportation and by partially motorizing several regiments. The effect of the reduction of 1923 was to reduce the number of combat, ration and baggage wagons from thirty-six to sixteen, the number of rolling kitchens from fourteen to seven, and to eliminate entirely the water carts.

Reductions in the past and the reduction in prospect have been caused by insufficiency of appropriations to cover purchase of replacement animals or purchase of forage.

The exact method to be pursued in meeting the reduction in prospect has not been finally decided upon. It is probable that the methods in the past will be repeated, namely, the reduction will be met in part by further motorization, and in part by reduction of the number of animals allowed for regimental units.

Marksmanship Reports

The following additional marksmanship reports of Infantry regiments have been received in the office of the Chief of Infantry:

RIFLE MARKSMANSHIP

Inf. Regt.	*No. of men on rolls required to fire*	*No. of men who completed course*	*Pct. who completed the course based on number on rolls*	*Number of men who qualified*				*Average score per man*	*Pct. qualified based on No. who completed course*
				Exp.	*S S*	*M M.*	*Total*		
6	627	620	98.88	115	188	296	599	283.90	96.61

Reviews and Discussion

Tank Gunnery

BREVET LIEUTENANT COLONEL G. LE Q. MARTEL, D.S.O., M.C., R.E.

It is always of value to get the points of view of other armies than our own on live military matters. The present article, which is reprinted from the [British] "Royal Tank Corps Journal," falls into this category.—EDITOR.

THE editor asked me to contribute an article, of a controversial nature if possible, for publication in *Journal* [*The Royal Tank Corps Journal*], and the question of Tank Corps gunnery at once suggested itself. Everyone is agreed that gunnery in the Corps has made very great strides in the last few years; it has in fact changed from being nothing much better than wild uncontrolled shooting to a proper standard of gunnery, and it is not the gunnery itself but the effect and result of this gunnery that is controversial.

To examine the subject properly we must cast our minds back to the war-time use of the tank, because everything has developed from that time. During the war the tanks grew longer and longer as the trenches became more formidable, until we reached a 32-foot tank weighing 35 tons. This tank was of necessity a very large and conspicuous target and had to be defended from enemy antitank weapons by the covering fire and smoke of an artillery barrage as well as by its own weapons. In fact the former was always far the most effective. In spite of the large number of guns which the enemy used as special antitank weapons, their fire was usually and very effectively masked by this barrage; but where the barrage was weak or nonexistent, very heavy casualties invariably occurred among the tanks. There were, of course, cases where the tanks defended themselves against these antitank weapons by the use of their own weapons, and there were other cases where this was effected by the infantry advancing in support, but these were the exception and a successful tank attack generally depended on a good barrage with a fair proportion of smoke.

With the present-day improvement in tank gunnery and increased speed of the tanks the argument is raised that this would no longer be the case and that enemy antitank weapons could be smothered by the fire which can be produced by the modern tank. With this view I disagree. However good the gunnery may be, the main trouble always has been and probably always will be the detection of the target. Antitank weapons can be concealed quite easily, and even with modern improvements the visibility from a tank is poor. There are cases where the

only available cover for the antitank weapons lies in one or two small copses, and these can be smothered by fire, but this is not the normal case, and, as a rule, blind firing, however well controlled and directed, will not be effective against invisible antitank weapons.

Where, then, does all this lead? It certainly does not mean that tank gunnery is unimportant, because at times the highest skill is required in this direction, but it does mean that we must recast our ideas about the general employment of tanks. The employment of tanks in war can be divided into two classes—the mobile work including independent action before the main armies come to grips, and the pitched battle against the enemy main position. For the former we cannot expect to get much artillery support for the tanks, but as there will be little in the way of enemy defenses and trenches to cross, we do not necessarily need a long tank. For the latter we can count on artillery support, and as there will be trenches or obstacles of many kinds to cross, a tank with a fair length of track is essential, and from experience we know that we need a tank with a minimum armament of one gun and two machine guns for this purpose. In other words, for the main battle the tank must be long and somewhat expensive, and as we cannot afford large numbers of these we must concentrate our assault weapons (machine guns) and the support weapon (the gun) in the one tank. These weapons will assist to cover the advance of the tank, and well trained tank gunners will bring effective fire to bear on the enemy; but against well manned antitank weapons the tanks will need the full power of artillery support in the main assault. For the mobile warfare in which we do not need a long tank, we need not concentrate our weapons; in fact, there is every advantage in not doing so. What we want to do in this case is to disperse our assault weapons (machine guns) into small tanks with one weapon in each and place the support weapon (the gun) in another machine. In this mobile warfare nothing like as many antitank weapons will be met as in the main battle, and this fact, coupled with the great advantage of being able to use dispersion, i. e., larger numbers of smaller tanks, should enable the tanks to advance successfully without artillery support.

This brings us to two types of tanks, and they have already been named the "light tank" and the "medium tank." No one knows whether the words "light" and "medium" refer to the weight of the tank, the armor or armament, or whether they refer to weight at all, and in point of fact they are really only terms to express a type of tank. To these two we must now add a third type, namely, the "close support tank" carrying a gun such as a 3-pounder. For mobile operations we need only the light tank and the close support tank. Our requirements for an armored force depend entirely on what we intend an armored force to be able to do. The existing force had to be formed from the only available arms and weapons and was, therefore, in the nature of an armored army. As it possessed a battalion of medium tanks, it was supposed to be able to hit hard when required and attack a main position; but, if our reasoning as regards the effect of fire from the tanks is correct, these tanks cannot do this without considerable artillery support. For

the more mobile operations this armored force is already hampered by the lack of mobility of the medium tank, and, if we add to this a mass of field artillery, the force would become altogether too slow and unwieldy for anything except a main attack.

Instead, it is suggested that the armored force should be composed of nothing but armored cars, light tanks and close support tanks and a small proportion of sappers, signals, and repair personnel. This would produce a simple and highly mobile armored force. Its tactics would be those of the old independent cavalry, but far more effective in operation. Armored cars would lead the way and carry out long-distance reconnaissance. The main body would follow, carrying out its own close reconnaissance, and during the advance any odd machine guns left in position by the enemy could be ignored or dealt with when met by the main body, as the majority of the vehicles would be armored. A close search of the ground, which causes long delays with cavalry, would therefore be unnecessary. The whole object of the force would be to hit the enemy wherever he is weak. While the opposing army was advancing to battle, the armored force would be a continual threat. Occasionally a flank guard or vanguard would be bitten off, and this would force the enemy to put out strong protective detachments which would considerably retard his rate of progress. In addition, the armored force would raid communications and carry out important demolitions if opportunities occurred. This, again, would force the enemy to make detachments. In this way the enemy would be hampered and possibly made to conform to our commander's plans. It is only necessary to consider the effect that this might have had on the advancing Germans in 1914 to realize that such tactics might lead to decisive results.

When the main armies meet in the battle the armored force would pursue similar tactics. They would feel for a flank—not with the idea of attacking this flank, but of passing round it. No commander could afford to let an armored force pass round his flank and attack his communications and possibly his guns. The latter is a precarious task for medium tanks, but a far safer rôle for large numbers of light tanks. Hence the enemy would have to extend his flank and guard it with antitank weapons, robbing his main front to effect this, and eventually the front or flank would break.

For all this work the armored force would require mainly light tanks and close support tanks, i. e., shielded 3-pounder guns on light tanks. The latter would be required to support the light tanks against shielded antitank weapons and against similar light tanks launched by the enemy, and a proportion of about one close support to six light tanks would probably be suitable. The capabilities of a force of this nature should be very great, but the main body would still be needed for decisive action, and for this purpose normal infantry formations are still needed but require the maximum assistance that we can give them with medium tanks and every other form of mechanical assistance.

The whole basis of these arguments revolves round the capabilities and effect of Tank Corps gunnery. If the weapons in the tank can subdue the concealed antitank gun, then the medium tank has advantages over the

light tank, and we must endeavor to make it sufficiently mobile to accompany the armored force, but I do not personally hold this view. That we need a high skill in Tank Corps gunnery is obvious, because without this the tank will lose its moral effect, but my own view is that when we have developed a good light tank with a single machine gun, this will form the main "field" tank of the army, and the medium tank will be more in the nature of heavy artillery, to be brought up for the main pitched battle.

The Legal Effect of Army Regulations

Captain Samuel F. Cohn, 31st Infantry

From time to time officers have occasion to consider the legal effect of army regulations. A case in point arose not long ago over the legal effect of post exchange regulations, for which the present author prepared a civil suit for trial. The material that he used then he has worked into the present article.—Editor.

PARAGRAPH 1a of Army Regulations No. 1-15, dated December 12, 1927, undertakes to set out the legal force and effect which regulations of the Army are considered to have. This paragraph, in general, concludes that since "the President is the constitutional Commander-in-Chief of the Army, is vested with a general and exclusive authority to make and publish regulations for the Army and may, in the due execution of the laws for the government of the Army, make needful and proper regulations without any legislative authority whatever," army regulations so issued by the President have the force of law. However, this conclusion is qualified by the statement that regulations have such legal effect only when they are consistent with the statute law and that such effect extends only within the scope of the regulation but not beyond it.

Since this conclusion as to the legal effect of army regulations is contained in the regulations themselves, it is pertinent to examine the authorities upon which this claim might rightfully be based.

Winthrop in his "Military Law and Precedents" (1920, pp. 30-31) discusses in considerable detail the history of all army regulations published up to and including the revision of February 9, 1889. Winthrop concludes that since the act of March 1, 1875 (18 Stat., 337), which repealed a provision in a prior act, that army regulations must be reported to and approved by Congress, army regulations now gain their legal effect upon mere publication by the President without reference to Congress.

However, no regulations were ever published pursuant to the act of 1875, but by act of June 23, 1879, Congress authorized and directed the Secretary of War to codify and publish for the Army all regulations and general orders then in force, and appropriated funds for this purpose. This act, according to Winthrop, was in effect an appropriation for the expense of carrying out the prior enactment of 1875.

Subsequent to the passage of this legislation, a compilation of general orders and regulations in force February 17, 1881, was made and published to the

Army by the Secretary of War. Many modifications of these regulations were, of course, necessary until on February 9, 1889, a complete revision was announced. Subsequently other revisions, modifications and new editions were published from time to time until the establishment of the pamphlet system now in force.

Winthrop, in discussing this question —the legal effect of army regulations— states that the act of March 1, 1875, is (in 1895) still in force. Presumably this statement is made in order to show that authority for the numerous revisions and modifications of army regulations subsequently announced might be found in statutory enactment. However, it would seem that if this act were in force in 1895, it would still be in force today, since no record can be found that Congress has ever purported to repeal it. Nevertheless it is not included in "The Code of Laws of the United States," which purports to be a restatement of the general and permanent laws of the United States in force December 7, 1925. It would seem to follow, therefore, that the act of March 1, 1875, is not in force today and was in force in 1895. Hence no specific statutory authority for the present army regulations may be found in the act of 1875, except on a theory that these regulations are merely revisions of the original compilation; although that act may undoubtedly be cited in support of the proposition that Congress no longer reserves to itself the function of approving the army regulations prior to their announcement. If that be true, then to that extent only may it be argued that the act of March 1, 1875, represents the statutory authority for existing army regulations.

However, as Winthrop himself has stated, no statutory authority for the publication of army regulations is necessary, such authority being useful mainly to provide the funds required for this purpose. It must be obvious that the President, in the due execution of the laws governing the Army, may publish regulations for the guidance of the Army much in the same manner as he may publish regulations for the guidance of any other executive branch of the government, and the courts which have been called upon to construe army regulations have always recognized that power of the President without attempting to seek statutory justification therefor.

It is true, then, that army regulations have the force and effect of law within the limitations set out in par. 1a, A. R. 1-15, and that all the claims made on behalf of army regulations in that paragraph are fully justified. To understand this statement, however, it is essential, as well as highly interesting, to examine some of the decisions of the courts which from time to time have considered this question.

The earliest, and in all probability the leading case on this subject, is the case of United States versus Eliason, reported in 16 Peters, 291, and decided by the Supreme Court of the United States in 1842. Owing to the frequency with which this case has since been cited, not only for the proposition that army regulations have the force and effect of law but that all regulations of the President have such effect, a brief statement of the facts and issues of this case would seem desirable. These are as follows:

The defendant was a captain of Engineers against whom the United States brought suit to recover the sum of $2,600.75, charged to him on the books of the Treasury Department, as disbursing officer at Fort Calhoun between the

dates November 7, 1834, and September 10, 1838. The defendant, who had retained the above sum of money, stood upon an army regulation of 1821 and 1825 which contained the following provision:

When there is no agent for fortifications the superintending officer shall perform the duties of agent; while performing such duties rules and regulations for the government of such agents shall be applicable to him; and as compensation for the performance of that active duty, he shall be allowed for moneys expended by him, in the construction of fortifications, at the rate of $2.00 per diem during the continuance of such disbursements, provided the whole amount of emolument shall not exceed 2½ per cent of the sum expended.

The defendant, relying on this regulation, paid to himself the sum of $2,600.75, which the United States sought to recover. It was conceded that, if the regulation was in force during the period for which Captain Eliason made the payment to himself, sufficient authority existed for such payment and no recovery could be had. It was the contention of the United States, however, that the regulation had been repealed by a subsequent regulation dated March 14, 1835, and that all per diem payments made by Captain Eliason to himself after that date were, therefore, illegal and should be refunded to the United States. Before considering the provisions of the later regulation (dated March 14, 1835), it is essential that an intervening act of Congress of March 3, 1835, upon which the regulation of March 14 was based, be referred to. This act of Congress in effect prohibited the payment of extra compensation to officers of the Army. It may be admitted for the purpose of this discussion that this act of Congress was intended to apply to the appropriations for the year 1834-1835 only, and, further, that the sum in controversy did not pertain to the appropriations of that year. The Attorney General, however, had erroneously construed this act as permanent legislation applicable generally, and the Secretary of War had accordingly issued the regulation of March 14, 1835, above referred to, and upon which the United States relied to effect recovery. This regulation was as follows:

The proviso in the act of Congress dated March 3, 1835, entitled "an act making additional appropriation for the Delaware breakwater, and certain harbors and removing obstructions in and at the mouth of certain rivers for the year 1835," and which prohibits the allowance of extra compensation to officers of the Army, has been submitted to the Attorney General for his opinion, and that office has decided that it extends to and prohibits all allowance of all extra compensation of any kind whatever, for which provision is not made by law: hereafter, therefore, no extra compensation will be allowed.

The defendant, Eliason, contended that since the act of Congress was applicable only to the appropriation of that year, the army regulation issued pursuant to the erroneous interpretation of the Attorney General was ineffective to deprive him of the per diem claimed and retained by him. The United States contended that, regardless of the intention of Congress as expressed in the act of March 3, 1835, the army regulation of March 14, 1835, completely superseded the regulation of 1821 and 1825, notwithstanding that it was based upon an erroneous construction of the law, and hence all payments pursuant to the earlier regulation made after March 14, 1835, were illegal and must be refunded.

Considering the facts above stated,

the regulations quoted and the conflicting contentions with respect thereto, the Supreme Court of the United States delivered an opinion, from which the following is quoted:

> The power to establish implies necessarily the power to modify or repeal or to create anew. The Secretary of War is the regular constitutional organ of the President for the administration of the military establishment of the nation, and rules and orders publicly promulgated through him must be received as the acts of the Executive and as such be binding on all within the sphere of his legal and constitutional authority. Such regulations cannot be questioned or denied because they may be thought unwise or mistaken. . . . The question propounded, therefore, is whether a subordinate officer of the Army insisting upon a prior regulation which he thinks either is or ought to be in force shall obtain from the government emoluments which a subsequent order from his superior had warned him that it was not in his power to require.

This question the court answered in the negative, and rendered judgment for the United States.

A hasty examination of this case might lead to the mistaken conclusion that the Supreme Court of the United States has given legal sanction to an army regulation which contained an erroneous interpretation of an act of Congress. A moment's reflection, however, will reveal the fallacy of such a conclusion. It is true that the War Department published the regulation in question because of the erroneous interpretation of an act of Congress. Nevertheless, the power existed to publish the regulation so far as its subject-matter was concerned, regardless of the reason which impelled the publication. No attempt was made in this regulation to deprive an officer of the Army of rights *granted him by Congress*, and it is unquestioned that no regulation could have such effect, which clearly demonstrates the statement in the regulations themselves that they have the effect of law *only when they are consistent with the law*. In the regulation under consideration the War Department merely deprived the officer of emoluments which the War Department itself had granted him by prior regulation. It had the power to do so, nor could that power be affected by the fact that the regulation was issued because of an erroneous belief as to the intent of Congress. This case has been so frequently cited by the courts in subsequent cases in which presidential regulations have been in issue that it merits study on the part of all officers of the Army who are required to apply and interpret army regulations.

That the legal effect of army regulations is not confined merely to the publications to which that name has been applied, but includes as well other regulations of the Army such as the Manual for Courts Martial and the Manual of Interior Guard, is illustrated by two cases, both of which cited United States vs. Eliason, heretofore discussed. The first of these is the case of "In Re Brodie," decided by the United States Circuit Court of Appeals in 1904 and reported in 128 Fed., 668. This case involved a petition for a writ of habeas corpus attacking the validity of the proceedings of a general court martial. The petitioner had been convicted by general court martial and sentenced to a period of confinement. The sentence of the court did not specify the place of confinement, but left that to the discretion of the officer who appointed the court, who had thereupon designated a Federal penitentiary. This action of the court was in compliance with a provision in the 1901 Manual for Courts Martial which directed courts not to

designate the place of confinement. The petitioner, however, contended that the failure of the court martial to designate the place of confinement rendered the proceedings null and void, relying on par. 940 of the 1895 Army Regulations, which required courts martial in sentencing prisoners to designate whether confinement was to be in a penitentiary or at a military post. It was not contended that the offense of which petitioner had been convicted did not warrant penitentiary confinement. It was the petitioner's contention that par. 940 of Army Regulations, 1895, which was still in force—unless repealed by the provision in the Manual for Courts Martial, 1901—had the effect of law (citing U. S. vs. Eliason) and hence the contrary provision in the Manual for Courts Martial was ineffective to authorize the sentence in controversy. In his argument the petitioner insisted that the army regulations were the act of the President and hence had the force of law, whereas the Manual for Courts Martial had been issued by the Secretary of War without reference to the President. It will thus be seen that the court had squarely before it the issue whether provisions in the Manual for Courts Martial were to be given equal legal effect with army regulations. The court denied the petition, holding that the Manual for Courts Martial, although issued by the Secretary of War, was the act of the President to the same extent as were army regulations, and that both had the same force and effect. Hence the subsequent provision in the Manual for Courts Martial (although contained in a footnote) repealed the prior provision of army regulations.[1]

In the second case above referred to, the legal effect to be given a provision in the Manual of Interior Guard Duty was presented to the courts for determination. This was the case of "In Re Fair," decided by the United States Circuit Court in 1900, and reported in 100 Fed., 153. This was also a petition for a writ of habeas corpus, the petitioner being a soldier stationed at Fort Crook, Nebraska, who was being held by the state authorities on a charge of murder. The facts were briefly as follows: A prisoner had escaped from the Fort Crook guardhouse and was hiding in a neighboring town. The petitioner, a member of the guard, was engaged in searching for this prisoner and discovered him in the adjacent village. The petitioner directed the escaping prisoner to stop or he would fire. He repeated this order, but the prisoner attempted to perfect his escape, whereupon petitioner fired and killed the prisoner. There was a provision in the Manual of Interior Guard Duty which directed members of a guard who were attempting to prevent escape of prisoners to act precisely as the petitioner had acted and to kill the prisoner if his escape could not be prevented in any other way. This provision of the manual was supplemented by verbal order of the officer of the day when petitioner left the guardhouse to commence the search. The petition for a writ of habeas corpus was brought in the federal court pursuant to Section 753 of the Revised Statutes, which limits the issuance of such a writ by a federal court to a petitioner deprived of his liberty because of an act committed by him while engaged in executing a *law* of the United States.

[1] The 1928 Manual for Courts Martial is not open to the above objection—that it is the act of the Secretary of War—for this manual was announced by the President in an Executive Order dated November 29, 1927.

Now there was no law of the United States which directed petitioner to apprehend escaping military prisoners or authorized him to kill such a prisoner to prevent escape. The petitioner, however, contended that the provision in the Manual of Interior Guard Duty and verbal orders given him by his superiors had the effect of a law of the United States, so that an act committed while in the execution of such orders would come within the provisions of Section 753 of the Revised Statutes. The court accepted this view, and discharged the petitioner. It is to be noted that the court did not consider whether Fair was justified in killing the deceased under the circumstances. The consideration of this question would not be proper on a petition for a writ of habeas corpus. The court was restricted to the question whether or not the petitioner had acted under a law of the United States. If so, he must be discharged from the custody of the State authorities. It also appeared in this case that petitioner had already been tried by court martial on a charge of manslaughter and acquitted. This prior acquittal by court martial, however, would not have been a bar to a subsequent trial by the State authorities if the State courts could otherwise obtain jurisdiction. This case demonstrates that regulations contained in the Manual of Interior Guard Duty have the same legal standing as the provisions of army regulations and the Manual for Courts Martial. All three have the force and effect of law.

Similar effect was given to a written order of the Attorney General of the United States addressed to a Deputy United States Marshal in the well-known case of "In Re Neagle," 39 Fed., 860. In this case the petitioner, assigned by the Attorney General as a bodyguard for an Associate Justice of the Supreme Court of the United States while the latter was performing official duties in California, shot and killed an assailant who was about to attack the Justice with a knife. Upon being indicted for murder in the California courts, the petitioner was discharged on a writ of habeas corpus obtained pursuant to the same section of Revised Statutes as in the Fair case and exactly on the same theory.

Equal effect was given to the regulations of the Commissioner of Internal Revenue, in a series of cases in which collectors had been held in contempt by state courts because of refusal to produce their books on subpoena. There was a regulation of the Commissioner which forbade collectors to produce their books in state courts. In each case the collector was discharged on a writ of habeas corpus issued by a federal court under the same circumstances and on the same theory resorted to in the cases of In Re Fair and In Re Neagle.

From an examination of the above cases and decisions it must be evident that, whether or not army regulations gain their legal effect in part from statutory enactment as intimated by Winthrop or entirely because of the authority vested in the President of the United States by the Constitution, as the regulations themselves state, such regulations do in fact have the force and effect of law.

As stated in A. R. 1-15, however, army regulations have the force and effect of law *only within their scope*, but not beyond such scope. This restriction is clearly illustrated by the case of Kurtz v. Moffat, 115 U. S., 503, decided in 1885, in which it was alleged in a petition for a writ of habeas corpus that the defendant wrongfully arrested the petitioner as a deserter from the United

States Army, having no warrant to make such arrest. It was admitted that no express authority existed whereby defendant could lawfully arrest the petitioner as a deserter without first obtaining a warrant for such arrest. It was contended by the defendant, however, that such authority was impliedly conferred upon him by a series of army regulations beginning with 1821, all of which provided that a reward may be paid to any person who apprehends and delivers a deserter to an officer of the Army. Since these regulations made no reference to a warrant, it was argued that the arrest in the instant case was lawful. The court, in considering the effect to be given to the army regulations relied on by the defendant, held that although army regulations, deriving their force from the power of the President as Commander-in-Chief of the Army, are binding on all within the sphere of his legal and constitutional authority, they had no force beyond the scope of their authority, and could not serve to confer upon a civilian police officer authority to arrest a deserter without warrant. The writ was, therefore, granted, and petitioner discharged from custody.[2]

The above decisions of the courts have been discussed in the belief that knowledge of the principles involved in them, and an understanding of the propositions of law which have been thus determined, will enable those who have to do with regulations of the Army to appreciate that they rest, within their scope, upon a firm legal foundation, and that the force which the War Department has attributed to them in A. R. 1-15 is fully and completely sustained by the judgments of such federal courts as from time to time have been required to consider and pronounce upon them.

[2] This question could not arise today, since the 106th Article of War grants to civil officers, who have power to make arrests either under state or federal laws, authority to arrest deserters of the Army. The case is cited merely to illustrate the *principle* of law which applies when army regulations are relied upon in situations beyond their scope.

Bathos before Battle

From the Notebook of "General Experience"

JUST before the battle of Atbara, a war correspondent overheard two soldiers talking of home. A sentimental Seaforth Highlander said, "Ah, Tam, how many thousands there are at hame across the sea thinking of us the nicht!"

"Right, Sandy," replied his comrade, "and how many millions there are who don't care a damn!"

The Regular Army Infantry

The 1st Division, United States Army

The Antecedence of the First Division

THAT the 1st Division is inspired by the achievements and the training of the Regular Army is easily understood, but its achievements within a year from its creation are to be explained only by the stories of its component units.

The policy of tearing organizations apart, of expanding, combining, and reducing them, has sadly mixed up the history of many an old regiment of the Regular Army. The military traditions of our early years are carried largely by the historic units of our National Guard. But, in spite of this, the traditions and achievements of other days still live in organizations of today, and the desire to uphold the honor of units of the past is perhaps stronger than ever.

The 1st Infantry Brigade contains two regiments, the 16th and the 18th. President Lincoln's Proclamation of March, 1861, confirmed by Congress on July 29, 1861, created the 11th, the 16th, and the 18th Infantry. The colors of the 11th waved at Antietam, Chancellorsville, Cold Harbor, Fredericksburg, Spottsylvania, Gettysburg, and the Wilderness. In the West the 16th and the 18th fought shoulder to shoulder at Fort Donelson, Stone River, Chickamauga, Atlanta, and Missionary Ridge.

In 1865 the three battalions of each unit were expanded into regiments. In 1869 some of the regiments were combined to reconstitute the 16th and the 18th Infantry.

When the 1st Division landed in Cuba, the 16th Infantry was part of the 1st Brigade. At El Caney and San Juan, in spite of fever, thirst and torrid heat, the 16th pushed on against sharpshooter and shrapnel. When night finally came the regimental colors floated over the San Juan blockhouse. When General Pershing went to Mexico the 16th was part of the 1st Brigade.

After the Civil War the 18th Infantry went west to garrison the half-completed Fort Phil Kearney. There the Indians kept life from being dull. In 1896 the gold rush took the 18th to Alaska, where it performed notable services policing trails, making surveys, maintaining communications and bringing law and order out of chaos. During the Spanish War the regiment went to the Philippines.

The 26th and the 28th Infantry, which make up the 2d Brigade, were authorized by Congress on February 2, 1921, to replace Spanish War Volunteers.

The early service of the 26th Infantry was in the Philippines, about Manila and in southern Luzon. To Texas, to the Philippines, and back to Texas went the regiment. Luzon, Samar, and the Rio Grande became its

playhouse; the volcano, the jungle and the desert, its scenery; the Insurrecto, the Moro, and the bandit, its fellow actors; the kris, the dagger, and the campilan, its props.

The 28th Infantry, too, was young when it went to the Philippines to serve with distinction against the Moros in Mindanao. Later it campaigned in Mexico and then, spread through Texas, it watched the border.

One June evening in 1917 troop trains rolled quietly into the yards at Hoboken. The 1st Division—the 16th, the 18th, the 26th and the 28th Infantry—was on its way to France. On March 29, 1918, a party from the 28th Infantry raided the German lines. The regiment was the first American organization to raid and capture prisoners. At the Battle of Cantigny, the first real American action, the 28th led the attack. From then on the history of the 1st Division is so familiar as not to need retelling.

Thus briefly have we reviewed the Infantry of the 1st Division. The histories of the units of the other branches are no less stirring. The names of the commanders of the 1st Division call to mind some of the great exploits of the Mexican, the Civil, the Spanish, and the World Wars. When we think of the 1st Division, well may we remember that—

Their blood has watered western plains and northern wilds of snow,
Has stained Sierras highest peaks where piercing winds e'er blow,
Has dyed deep red the Everglades and deeper still, we know,
The sacred Montezuma shades and walls of Mexico.

* * *

1st Division Command Post Training

AT CAMP DIX, N. J., from June 16 to June 29 the 1st Division will conduct a series of command post exercises. These exercises will serve for development of the divisional team and *esprit de corps*, the development and training of the command posts separately and as a division team, the training of the communication units separately and as members of the brigade and divisional teams, and as a means of tactical instruction.

Both infantry brigades, the field artillery brigade, and all regiments will be represented by complete command post and communication personnel, and each regiment will be required to have one complete battalion organization. Consequently, the force that will operate at Camp Dix will be composed of Headquarters, 1st Division, Fort Hamilton, N. Y., Brig. Gen. H. A. Drum commanding; Headquarters and Headquarters Company, 1st Infantry Brigade, Fort Wadsworth, N. Y., Brig. Gen. O. B. Rosenbaum commanding; Headquarters and Headquarters Company, 2d Infantry Brigade, Madison Barracks, N. Y., Brig. Gen. C. E. Kilbourne commanding; and Headquarters and Headquarters Company, 1st Field Artillery Brigade, Fort Hoyle, Md., Col. W. S. McNair commanding. The Headquarters and Headquarters Company, 16th Infantry, from Fort Jay, N. Y., Col. S. O. Fuqua commanding; Headquarters and Headquarters Company, 18th Infantry, Fort Hamilton, N. Y., Col. C. E. Humphrey commanding; Headquarters and Headquarters Company, 26th Infantry, Plattsburg Barracks, N. Y., Col. J. F. Madden commanding; and

Headquarters and Headquarters Company, 28th Infantry, Fort Niagara, N. Y., Col. G. E. Stewart commanding, will also be components of the force. Also, the Headquarters and Headquarters Battery, 7th Field Artillery, Fort Ethan Allen, Vt., Col. F. E. Hopkins commanding; the Headquarters and Headquarters Battery, 6th Field Artillery, Fort Hoyle, Md., Col. W. S. McNair commanding; the Headquarters and Topographical Section, 1st Engineers, Fort DuPont, Del., Major G. Mayo commanding; and Headquarters Special Troops, Miller Field, N. Y., Col. N. W. Fleet commanding, will be a part of the command.

The initial training will consist of the organization in the field of the two elements to be trained—the command posts and the communication units. This phase will be followed by a period of training in the functioning of the separate elements, separately and as a team. The third and final phase will consist of two tactical problems. The problems will follow the system used at Leavenworth for command and staff exercises. Each problem will be continuous and will cover several days; the first will have five exercises, and the second, seven. The first problem will cover detrainment and camp, march, halt for the night, defensive positions, operations in a defensive position, and counter attacks. The second will include a march in readiness for battle against a defensive zone, an echelonment forward in battle, an attack of the enemy's second positions, and pursuit. This second problem will require continuous day and night functioning for the entire command and communication system of the division.

* * *

Practical Competition Develops Battle Leaders

For extraordinary heroism in action south of Soissons, France, July 20, 1918, the sergeant, then a corporal, led his squad by crawling from shell hole to shell hole, through heavy machine gun fire for a distance of about 300 yards in advance of the Infantry. Selecting a position, he placed his machine gun so as to bring an enfilade fire on a section of enemy trench that was holding up the advance. The fire was so effective as to cause the enemy to retire.

SUCH is the wording of a War Department order that awarded a Distinguished Service Cross. The incident described is typical of hundreds of others in which corporals, sergeants, and lieutenants, by the use of their own initiative, cool heads, and daring, did deeds that turned the tide of battle. To

CORP. R. T. McKENNEY, CO. C, 18TH INF., DIRECTING HIS SQUAD IN THE TEST IN WHICH HE WON A BRONZE MEDAL

SGT. R. C. CUDMORE, CO. C, 18TH INF., AT THE HEAD OF HIS PLATOON. SERGEANT CUDMORE WON A BRONZE MEDAL IN THE JUNIOR LEADERS' COMPETITION

size up a situation correctly in the flash of an eye, to know what to do and how to do it, and to have that courage of heart and strength of character that will carry those with him through to a successful end against apparently insurmountable odds are essential qualities that every lieutenant and noncommissioned officer must have if our Army is to live up to its traditions.

These qualities of leadership are a characteristic of young America—but only training will develop them. With this point in mind, Brig. Gen. H. A. Drum, commanding the 1st Division, caused a series of competitions to be initiated during 1928. In these competitions, held at the various posts of the division, every man had to stand on his own two feet in comparison with the others of his rank in the division. The officers who supervised the tasks were Col. S. O. Fuqua, 16th Infantry, Fort Jay, N. Y.; Col. C. F. Humphrey, Jr., 18th Infantry, Fort Hamilton, N. Y.; Col. J. F. Madden, Plattsburg Barracks, N. Y.; Col. G. E. Stewart, 28th Infantry, Fort Niagara, N. Y.; Major G. Mayo, 7th Field Artillery, Fort Ethan Allen, Vt.

A PRIZE WINNING SQUAD FROM CO. C, 18TH INF., LED BY CORP. G. T. OWENS

In a rifle company a corporal was required to demonstrate his ability and resourcefulness in the conduct of a squad acting alone in attack or defense, or in command of a squad in the service of security. He could also be required to demonstrate his ability in estimating a situation, giving verbal orders, and message writing. Rifle company sergeants were required to command a section in problems designed to test their ability in two or more of the following subjects: organization and route march, section in attack or defense, night operations, security on the march or at rest, or flank combat march. Lieutenants were required to show what they could do in command of platoons in problems designed to test them in one or more of the following situations: platoon in attack or defense, platoon as a combat patrol, night operations, security on the march or at rest, or convoy escort.

Machine gun corporals were called upon to show their leadership qualifications in command of a machine gun squad on a detached combat mission, or their ability in the selection and construction of machine gun emplacement and cover. Each machine gun sergeant was placed in command of a section in support of a rifle company on a detached mission, or tested by being placed in command of a section acting alone in attack or defense. A lieutenant was placed in command of a platoon on a detached mission and required to solve it. Lieutenants were also tested on the characteristics of the weapon, mode of action, fire power, mobility, vulnerability, and ease of concealment.

The noncommissioned officers and lieutenants of artillery and engineer regiments were required to undergo tests similar to those of the **Infantry,** adapted to their own combat missions. They were called upon to demonstrate their ability and resourcefulness in such specialties as their unit's combat missions contemplate, including pontoon bridge construction at night, reconnaissance and tracing of a battalion center of resistance, supporting infantry in the attack, and defense against tanks.

The competitions proved that that necessary quality—leadership—is not lacking today, and that the "piping times of peace" produce officers and men who can think and act correctly and quickly. The following, together with forty-one noncommissioned officers, have been declared winners in their respective competitions and have received medals from the division commander:

1st Lieut. B. K. Erdwan, 1st Tank Co., Miller Field, N. Y.

1st Lieut. Vincent D. Mee, 16th Inf., Fort Jay, N. Y.

1st Lieut. Harold S. Ruth, 16th Inf., Fort Jay, N. Y.

1st Lieut. John H. Bennett, 16th Inf., Fort Jay, N. Y.

1st Lieut. Charles F. Ivins, 16th Inf., Fort Jay, N. Y.

1st Lieut. Frank T. Madigan, 16th Inf., Fort Jay, N. Y.

2d Lieut. Raymond E. Bell, 18th Inf., Fort Hamilton, N. Y.

1st Lieut. Frank C. Davis, 18th Inf., Fort Hamilton, N. Y.

2d Lieut. Malcolm F. Bauer, 8th Inf., Fort Schuyler, N. Y.

2d Lieut. Russell Blair, 18th Inf., Fort Hamilton, N. Y.

1st Lieut. Donald M. Ashton, 26th Inf., Plattsburg Barracks, N. Y.

1st Lieut. Charles F. Woodruff, 26th Inf., Plattsburg Barracks, N. Y.

2d Lieut. John P. Boland, 26th Inf., Plattsburg Barracks, N. Y.

1st Lieut. Frank R. Williams, 26th Inf., Plattsburg Barracks, N. Y.

2d Lieut. William J. Phelan, 26th Inf., Fort Ontario, N. Y.

2d Lieut. Paul E. Carroll, 28th Inf., Fort Niagara, N. Y.

2d Lieut. William J. Verbeck, 28th Inf., Fort Niagara, N. Y.
2d Lieut. Leigh A. Fuller, 28th Inf., Fort Niagara, N. Y.
2d Lieut. Reynolds J. Burt, Jr., 1st Eng., Fort DuPont, Del.
1st Lieut. Albert J. Hastings, 7th F. A., Madison Barracks, N. Y.
1st Lieut. R. C. Singer, 7th F. A., Fort Ethan Allen, Vt.

* * *

The 1st Division Nears Its Reserve Quota

REALIZING, first, its own mission that requires it to be in a state of constant preparedness for war, and second, the advantages that would accrue to Reserve officers assigned to it from the standpoint of training, the 1st Division commander has been working to secure the full complement of Reserve officers authorized—303.

Last year 129 Reserve officers joined the division and made its quota 65 per cent complete with 198 now assigned. These officers are of all grades from second lieutenant to lieutenant colonel. Many of them had service during the World War and are well-seasoned officers.

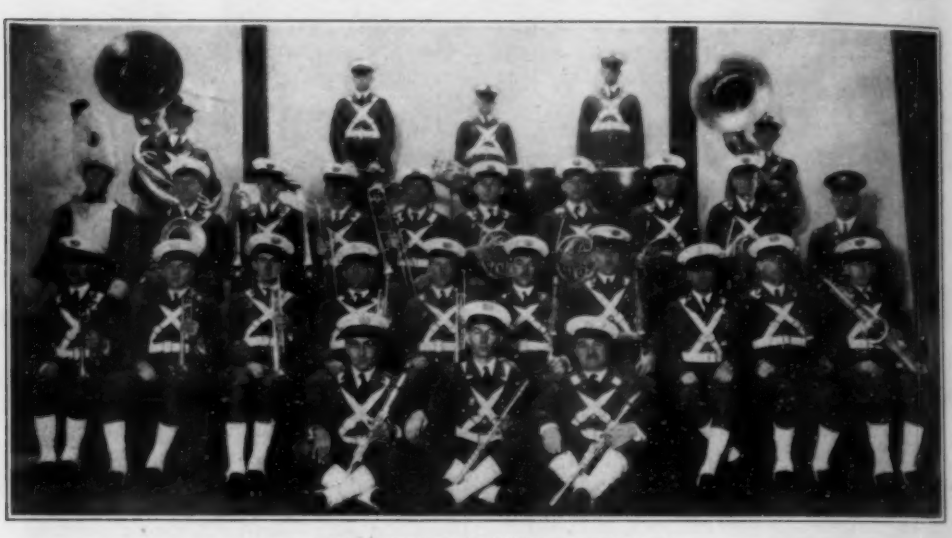
Most of these Reserve officers have formed their contact with the Regular service as a result of active training with units of the division at its different posts, have become acquainted with the Regular officers, and have realized the splendid benefit to be derived from frequent association with the active service. When they have joined a regiment, they have been assigned to a company or a battery, have received special training as opportunities offered and have had a chance to become an intimate part of that team whose game is to conduct the decisive phase of combat.

With the coming of this year's summer training period a large number of Reserve officers will be attached to units of the division for periods of active training. From this group it is expected the remaining number will come to fill the division's quota.

Here and There with the Infantry

THE 3D INFANTRY, Col. W. C. Sweeney commanding, is helping to prepare for promotion the Reserve officers assigned to the regiment and enlisted men of the garrison who hold Reserve commissions. The school meets on alternate Thursday evenings. Col. W. B. Graham, Lieuts. C. L. Davidson and F. J. Spettel are the instructors. The courses include map reading, scouting and patrolling, weapons and musketry, mobilization, administration, and military hygiene and first aid.

THE 3D INFANTRY BAND is a cosmopolitan organization. It has thirty-one members who originated in fourteen different states and two foreign countries. The members of this group of musicians represented thirteen different occupations before they entered on musical careers. Besides broadcasting



THE THIRD INFANTRY BAND

a concert each week during the winter season (Friday evenings, 6:00 to 7:00 p. m., Station WCCC, and Saturday nights, 10:15 to 11:15 p. m., Station KSTP), the band gives Sunday afternoon outdoor concerts at Fort Snelling during the summer season and makes frequent appearances in the twin cities and in neighboring communities in Minnesota and adjacent states.

On January 29, the 16th Infantry, Col. S. O. Fuqua commanding, held a transportation parade and inspection, including a study in camouflage. The last named event was in the form of a demonstration of a set-up of a regimental headquarters for operation in the field and a study in the use of organizational camouflage from aerial observation. The accompanying photograph shows some of the camouflaged transportation. The camouflage demonstrations are a part of a series of studies designed to test the value of various types of organizational camouflage. The program calls attention to the fact that the camouflage that was demonstrated is varied and that it does not in every instance blend with the surrounding terrain. It was not the intention in this particular demonstration to have perfect camouflage for each vehicle, but only to point out possibilities.

The 16th Infantry indoor rifle team is composed of the crack shots of the

16TH INFANTRY TRANSPORTATION, CAMOUFLAGED

MEMBERS OF CO. E, 6TH INF., RECEIVING SAND TABLE INSTRUCTION

regiment. In a series of telegraphic indoor matches it has defeated the teams of the 3d, the 26th, and the 29th Infantry. Shooting shoulder to shoulder, the 16th Infantry team also defeated the 18th Infantry team at the Fort Jay indoor gallery range. The team expects to shoot against the strong 4th and 7th Infantry teams in the near future.

THE LAST SECTION of the 29th Infantry Cuartel barracks has been completed and occupied by units of the 1st Battalion. The entire regiment is now in the new barracks.

COMPANY F, 29TH INFANTRY, Capt. R. B. Lovett commanding, won the regimental small-bore firing competi-

THE 16TH INFANTRY FIFE AND DRUM CORPS

tion this season. Company G was second. Major J. R. Brooke, who is in charge of all small-bore practice in the regiment, conducted and supervised the competition.

FIFTEEN uncommissioned officers of the National Guard have reported at the Infantry School as members of the National Guard course on communications. All members of the class come from the continental limits of the United States except Staff Sgt. R. G. Seijo, who is a member of the National Guard of Porto Rico. Capt. J. B. Sweet, Infantry, is the company commander.

This year's National Guard and Reserve Company Officers' Classes have reported at the Infantry School for a three-months course that ends on May 23, 1929. The officers are divided into two companies. Company E, of which Capt. W. M. Hudson is supervisor, has a strength of 105 members and pursues a course in rifle company weapons. Company F, of which Capt. H. J. Collins is supervisor, has 45 members and studies machine gun and howitzer weapons.

IN THE 30TH INFANTRY, Col. F. R. Brown commanding, all rifle companies and service companies entered the Company Team Match of the National Rifle Association, and the regiment entered a team in the Regimental Team Match. The regimental team has arranged telegraphic matches with the 3d and the 7th Infantry. Colonel Brown is stressing the importance of the small-bore shooting and feels that the interest stimulated by the small-bore contests will reflect most favorably during the next target season.

In the Field of Athletics and Recreation

THE MEDAL offered by the Horse Association of America for the best-playing polo pony of the Infantry School string for the 1928 season has been awarded to Virginia, trained and played by Capt. J. D. Forsythe, Infantry. The award was made by a board composed of Major C. B. Lyman, and Lieuts. B. R. Jacobs and H. Y. Grubbs.

CAPT. HARRY E. FISCHER, 3d Infantry, has donated a silver loving cup to be awarded the team that shows the best sportsmanship during the year at Fort Snelling. While the details for awarding the cup have not been worked out, it will probably be given on a vote of the company commanders of the post at the close of the baseball season, and will be presented on Organization Day, September 21. Captain Fischer has presented the cup in order to encourage the spirit of fair play and sportsmanship that is shown by the hockey, curling, basketball and baseball teams that have never won a championship but are entitled to recognition for the sterling quality of their sportsmanship.

THE 10TH INFANTRY Doughboy Polo Team has come through the indoor season with an unbroken record of victories. It defeated the strong team of the Cincinnati Rifle Club and thereby won the midwestern championship and the

THE FORT SNELLING CURLING SQUAD, 1929

Robert Granniss Trophy. It is now entitled to play in the National Championship games in the latter part of March. The Doughboys have also won games from the West Point Officers' team and the Princeton University team. The members of the team are Capt. J. L. McKee, Lieuts. D. W. Brann and C. R. Farmer, all of the 10th Infantry.

Col. A. A. Parker, of the 23d Infantry, is proud of his regiment's basketball team. Under the direction and coaching of Lieut. P. T. Heffner, Jr., the team has just won the championship of Fort Sam Houston for the third consecutive year. During the season just past it won every game and scored 488 points against 232 points scored by its opponents.

Another championship basketball team is that of Company E, 29th Infantry, Capt. C. L. Rutledge commanding. Coached by 1st Sergeant Davis, the team this year won the regimental championship for the third consecutive time, without the loss of a single game.

A very successful basketball series

THE 23D INFANTRY'S CHAMPIONSHIP BASKET BALL SQUAD

has been completed by the 30th Infantry as the first part of an elaborate athletic program for 1929. Company K sent every opposing team down to defeat and is now the regimental champion. A regimental basketball team is now in training for the IX Corps Area Competition in March. The 30th Infantry team won the Corps Area Championship last year, and as a result played in and won the Hawaiian Department Championship. It hopes to repeat this year.

With the reopening of the completely refinished bowling alleys, the 30th Infantry Bowling Tournament is being played during March. An officers' team is also being organized to play against other officers' teams in the Bay District.

Time That the United States Has Spent at War from 1775 to 1920

BEFORE 1830 the United States had a number of skirmishes and wars with the Indians, interspersed with intervals of peace; but beginning with the Sac and Fox Indian War, 1831, there was almost constant Indian warfare up to 1896. Although sometimes eclipsed by wars of greater proportions, the Indian troubles continued more or less throughout the whole period.

	Began	*Ended*	*Time Consumed* Yrs.	Mos.
War of the Revolution	Apr. 19, 1775	Jan. 14, 1784	8	9
Wyoming Valley Disturbances and Shay's Rebellion	 1782	Jan. 5, 1787	5	
Northwest Indian Wars and Whisky Insurrection	Jan., 1790	Aug., 1795	5	8
War with France	July 9, 1798	Sept. 30, 1800	2	3
War with Tripoli	July 10, 1801	June 4, 1805	3	11
Northwest Indian Wars	Nov., 1811	Oct., 1813	2	
War with Great Britain	June 18, 1812	Feb. 17, 1815	2	8
Seminole Indian Wars	Nov. 20, 1817	Oct. 31, 1818		11
Yellowstone Expedition (Indian)	July 4, 1819	Sept., 1819		3
Blackfeet Indian Wars	Apr. 1, 1823	Oct. 1, 1823		6
LaFevre Indian War	June, 1827	Sept., 1827		3
Sac and Fox War	Apr. 1, 1831	Oct. 1, 1831		6
Black Hawk War	Apr. 26, 1832	Sept. 21, 1832		6
Nullification Troubles in South Carolina	Nov., 1832	Feb., 1833		3
Cherokee and Pawnee Disturbances	June 30, 1833	 1839	6	6
Seminole Indian War	Nov. 1, 1835	Aug. 13, 1842	6	9
War With Mexico	Apr. 25, 1846	May 30, 1848	2	1
Various Indian Wars with Cayuse, Navajo, Comanche, Kickapoo, Snake, Sioux, Seminole, and others	 1848	 1861	13	
Civil War	Apr. 15, 1861	Aug. 20, 1866	5	4
Various Indian Wars (did not cease through Civil War)	 1865	 1890	25	
Sioux Indian War	Nov. 23, 1890	Jan. 19, 1891		2
Apache and Bannock Indian Troubles	June 30, 1892	June 30, 1896	4	
Spanish-American War	Apr. 21, 1898	Apr. 11, 1899	1	
Philippine Insurrection	Apr. 11, 1899	July 15, 1903	4	3
Boxer Expedition	June 20, 1900	May 12, 1901		11
Cuban Pacification	Sept. 29, 1906	Apr. 1, 1909	2	6
Nicaraguan Campaign	Aug. 28, 1912	Nov. 2, 1913	1	2
Vera Cruz Expedition	Apr. 21, 1914	Nov. 26, 1914		7
Punitive Expedition into Mexico	Mar. 15, 1916	Feb. 5, 1917		11
The World War	Apr. 6, 1917	July 2, 1921	4	3
Total	.....	.....	111	10

The Infantry Association

Army Legislation

THE members of the Infantry know by this time what happened to the Army promotion legislation in the closing hours of the last session of Congress. There is no need either to retell the tale or to try to ascribe reasons for what failed to happen. Suffice it to say that, in the opinion of the officers of the Infantry Association, among others, the fact that the proposed legislation failed to pass does not mean that the incident is closed. To the Association it means only continuation of the fight for something that the Army needs, should have, and must in the end have.

And the solution of the promotion question is not the only thing that the Army needs, should have, and in the end must have. Readjustment of pay is at least as important.

The Association has gathered a mass of incontrovertible data on these two subjects. Analysis of these data leads to the inevitable conclusion that the Army needs, should have, and in the end must have a solution of the promotion question and an increase of pay. It is the purpose of the Association, before Congress sits again, to make this fact so clear that no one can fail to see it. Using only proper and ethical methods, but using all of these, the Association pledges its support to these two most important of the propositions that affect the Army today—solution of the promotion question and upward revision and readjustment of pay for the Army.

A Change

THIS issue inaugurates a change in the content of the INFANTRY JOURNAL. The National Guard and the Reserve Sections no longer appear.

The editor is taking this step because he feels that an Infantryman is an Infantryman, no matter to what component of the Army of the United States he may belong. It is also fair to say that the majority of the readers of the INFANTRY JOURNAL are good Infantrymen. In order to best serve the majority, therefore, it would appear wisest to devote as much space as possible to articles that may interest good Infantrymen—without regard to whether they be Infantrymen in the Regular Army, the National Guard, or the Organized Reserves.

Since the "Talkies" came, Hollywood is *stronger* than ever for Old Golds

WALLACE BEERY, *transport pilot No. 3298,* Paramount star, now appearing in "Chinatown Nights," tells how the movie stars are guarding their throats with OLD GOLDS.

"A year or so ago, Hollywood didn't think much about its vocal chords or its voices. We were all in the *silent* drama then.

"But the coming of the talkies has changed things. Lovely stars, leading men, 'heavies' and ingenues are guarding their throats with zealous care . . . and smoking OLD GOLDS.

"It didn't need the talkies to win me to OLD GOLDS. I've been smoking them ever since they came to Hollywood, two years ago. But it's an added satisfaction to know they are kind to the voice, when the voice has assumed a new importance!"

(SIGNED)

Wallace Beery

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eat a chocolate, light an Old Gold, and enjoy both

Books

THE STORY OF THE BATTLES AT GETTYSBURG, Book I, by James K. P. Scott. The Telegraph Press, Harrisburg, Pennsylvania.

The ranks of the veterans of the Civil War are now so thinned by death that a volume dealing with one of the great battles of the war, written by a man who was an actual participant in the great conflict, is a valuable contribution to our military literature. Col. James K. P. Scott, the author of "The Story of the Battles at Gettysburg," was a member of the 1st Pennsylvania Cavalry, and, as such, took part in the campaigns of his regiment during the early years of the war. Although he was not actually present at the Battle of Gettysburg, he has devoted many years to the study of the battle. Hence he is probably even more familiar with the battle than if he had been with Buford in delaying the eastward advance of the Confederates during the concentration of the Army of the Potomac.

"The Story of the Battles at Gettysburg" (Book I, dealing with the first day) commences with a short account of the author's own life and gives a description of the country in the vicinity of Gettysburg at the time of the battle, a country with which Colonel Scott had been familiar from boyhood. The author gives a brief résumé of the events of the war in Virginia from its opening to the beginning of the Gettysburg campaign, and he relates in some detail the political intrigues which caused such frequent changes in the high command of the Army of the Potomac during the first two years.

The author makes abundantly clear the difficult problem which faced General Meade upon his assumption of command on June 28, 1863—a scattered army, tired and discouraged troops, an enemy accustomed to victory, the enemy's very location entirely unknown, and inexperienced and almost insubordinate commanders.

The method by which the author treats of the battle is unique in American military literature. The movements and actions of each of the larger organizations and of the more important smaller organizations which took part in the first day's fighting are traced consecutively. Thus the reader is able to follow each corps and division without having to refer back to material which he has already covered. The reader's task is greatly simplified by the eighteen sketch maps included in the appendix, which show in detail the various situations of the first day.

The author's style is intimate and colloquial. The book is illustrated with numerous photographs of the battlefield as it is today, and the text abounds with brief word-sketches that present the personalities of the principal commanders on both sides. The reader's interest is maintained by such unusual anecdotes as the origin of the nickname "Black Hats," applied to a Wisconsin brigade, and by such unconventional details as reference to Gen.

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A. P. Hill as the "Red Shirt." This surely gives us today a more vivid picture of General Hill than could be done by pages and pages of conventional description.

Although "The Story of the Battles at Gettysburg" presents no new facts regarding the battle, it does correlate all the previously known material so as to give us a more complete picture of the battle than we have had before. Although the author is a veteran of the Civil War, the text is entirely free of partisan and sectional bias, a fault which mars the historical value of most of the earlier works. It is a book which should prove of interest to students of our military history.

As They Saw Us, edited by George Sylvester Viereck, illustrated by maps from French and German official sources. Doubleday, Doran & Co., Inc., New York, 1929.

The battles of the World War in which the American Army participated are discussed freely, fairly, and frankly by military experts. This interesting compilation of foreign opinion on the American Army contains the following:

The American Soldier as Seen by a Friend, by Marshal Foch.

The American Soldier as Seen by a Foe, by General Ludendorff.

The Meuse-Argonne, by Generals Von Gallwitz (German) and Savatier (French).

American Battles in the Aisne-Marne Region, by Generals Savatier (French), Reinhardt (German), and Helle (French).

American Operations in the St. Mihiel Salient, by Generals Savatier (French) and Von Ledeur (German).

"As They Saw Us" is a valuable contribution to the history of the World War in that it presents to the military student a viewpoint of the A. E. F. written by friend and foe.

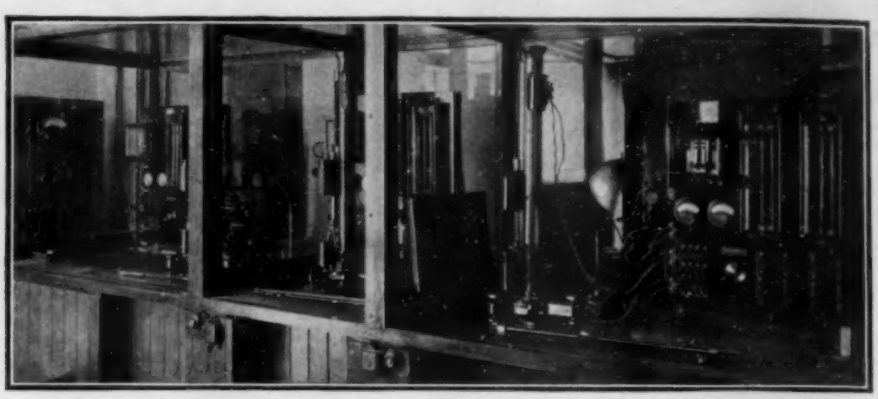
On the whole, the book contains much food for thought; it points out our weaknesses as well as our strength. One and all testify to the deplorable lack of training which is our shame, and to the superb morale that is our pride.

Suicide Battalions, by Capt. Wendell Westover, 4th M. G. Bn., A.E.F. Illustrations by Lucien Jonas, Official French War Artist. G. P. Putnam's Sons, New York, 1929.

In the preface of "Suicide Battalions" appears this statement, " . . . the Lieutenant. Lightly trained to think in higher terms, understanding comes with such meager information as sifts down to him; he interprets it for his men. His, the direct and all-important task of leadership, of understanding, of living the human and inhuman days with the men who occupy the ground and gain the decision in battle. He is expendable—hundreds of him come, are accepted into the hearts of men when times of stress prove him also a man,—and pass on. His the closest contact; his the greatest grief. . . . and when the affair is over, should he remain alive, he knows the board intimately."

Captain Westover tells his story from the viewpoint, first of a lieutenant, then from that of a captain. Always from the standpoint of the company—and the men who go into the making of it. It is the plain, straightforward narrative of the daily war-time lives of brother soldiers by one who remained alive to tell it. The humor makes you laugh, and the description makes you see

No. 2 OF A SERIES OF TALKS ON AMMUNITION QUALITY



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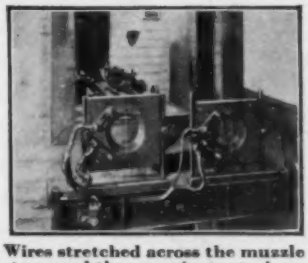
Du Pont powders are used by all of the principal ammunition manufacturers. They have selected du Pont powder because its ballistic qualities contribute so largely to the superiority of the ammunition, and the consequent success of its users. To maintain these standards of excellence, the ammunition companies will continue to load those powders ensuring the best ammunition possible for a specified purpose.



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things as he saw them. War stands out from the pages in all its misery, wetness, coldness, bloodiness, brutality, and also in its grandeur that is made by the heroic acts of ordinary men doing their duty.

The author carries you through the war from the formation of the battalion in Syracuse, New York, past the submarines to England, then to France and the long weeks of training. He tells of the troubles of the company in its first trench area. You are with him when his company helps stop the last German rush on Paris, and you rejoice with him at Vaux. You suffer with the company at Soissons, and are glad later that at St. Mihiel it has an easier time. His best friend was killed at Blanc Mont Ridge, but still they carried on. Then came the agony of the Meuse-Argonne, and finally the stunned realization of the Armistice—and the War was over. The march into Germany gives a chance for comparing the desolation of France with the peacefulness and apparent prosperity of "the loser."

No words are minced in discussing German atrocities. The author believes what he saw, and does not hesitate to say so. Our own pacifists and politicians, who are forever seeking to undermine their country's defenses, come in for their fair share of the author's heat. The book ends with a strong plea for training men in time of peace to avoid the unnecessary bloodshed that results from using untrained men in war.

For those who fought in France it will bring back memories. For those who did not get over it will help to a fuller realization of what it was really like. No lessons in strategy or tactics are attempted. It is just the story of a company officer, telling what he saw! One of the best books of its kind published to date.

Not Exciting

THE editor of the INFANTRY JOURNAL has received the following letter:

"The best plays of 1927-28, edited by Burns Mantel (Dodd, Mead and Co.), includes Eugene O'Neill's 'Strange Interlude.' These lines give an interesting view of our Infantry arm:

'Evans had been in the war, too, but only in the Infantry. Never saw anything exciting.'

"I feel that I ought to share the rich humor of Mr. Mantel's ideas with someone."

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